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ABSTRACT

Compiled in this publication are the extensive abstracts of 20 papers on educational reform. The original papers, which have been announced singly in "Research in Education," were written by well-known persons in the field of education. They cover the following aspects of change (several are treated by more than one author): institutional and educational change, the relationship between training and change, preservice and in-service teacher education, incentive systems, simulation and protocol materials in teacher education, competency-based education, needs assessment, instructional models, British primary education, Brunerian curriculum, the influence of student recruitment on program success, and the role of state education agencies in teacher education. (LP)

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LITERATURE SEARCHES OF MAJOR ISSUES ON EDUCATIONAL REFORM

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Compiled by
Allen Schmieder

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FOREWORD

This compendium of citations and summaries of 20 analytical/interpretative papers commissioned by the U.S. Office of Education to delineate significant educational reform issues is valuable on two counts: a) for its ideas and information about critical issues as perceived by notable educational pacesetters, b) for its access information to the 20 book-length documents processed for Research in Education and available through the ERIC Document Reproduction Service in microfiche and xerographic form. This project was conceived in collaboration with the National Center for Improvement of Education Systems, USOE.

This document illustrates well one of the many functions of an ERIC clearinghouse--helping readers gain access to what would otherwise be largely fugitive. It also points up the continuing successful efforts to build collaborative ventures. Particular credit is due Allen Schmieder, USOE, and Lorraine Poliakoff, ERIC Clearinghouse on Teacher Education, for carrying the total project through to a successful conclusion. Christine Pazak typed the copy for this clearinghouse publication.

You may do further research on this topic by checking issues of Research in Education (RIE) and Current Index to Journals in Education (CIJE). Both RIE and CIJE use the same descriptors (index terms). Documents in RIE are listed in blocks according to the clearinghouse code letters which processed them, beginning with the ERIC Clearinghouse on Career Education (CE) and ending with the ERIC Clearinghouse on the Disadvantaged (UD). The clearinghouse code letters, which are listed at the beginning of RIE, appear opposite the ED number at the beginning of each entry. "SP" (School Personnel) designates documents processed by the ERIC Clearinghouse on Teacher Education.

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--Joel L. Burdin
Director

February 1974

PREFACE

This publication includes abstracts of a collection of some of the most significant works done on the subject of educational reform during recent years. Although these summaries, prepared by Richard Guttenberg in cooperation with Columbia University and under contract to the National Center for Educational Statistics of the U.S. Office of Education, generally represent the highlights of the studies, readers interested in the complete works will find them on ERIC microfiche and hardcopy.*

The original searches were supported by the National Center for the Improvement of Educational Systems (USOE), which was trying to better understand the relationship--both existing and potential--between educational personnel development and the reform and improvement of educational systems. In organizing and initiating the study efforts, Iris Garfield, who was then Director of Planning and Development for the National Center, focused on 20 of the most "common education questions or issues" being raised at the time by the Administration, Congress, and educational leaders across the country.

Each of the persons or groups who made the searches was requested to a) make a comprehensive search of the relevant literature, b) prepare a narrative document analyzing the findings, and c) develop a bibliography for the subject under study. It was recommended that special emphasis be given to the latest information on trends and developments in the areas of instructional change, teacher training, and in-service training and curriculum development.

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*See p. *xi* for ED numbers of the original papers.

CONTRIBUTORS

Fred Bellott
Director, Bureau of Educational Research and Services
Memphis State University

David C. Berliner
Director of Evaluation
Far West Laboratory for Educational Research and Development

Robert D. Bhaerman
Director, Department of Educational Research
American Federation of Teachers

Joseph W. Crenshaw
Bureau Chief, Curriculum and Instruction
Florida State Department of Education

K. Fred Daniel
Associate, Planning and Coordination
Florida State Department of Education

Michael DeBloois
Consultant to the Faculty
Instructional Development
Utah State University

Paul W. DeVore
Professor, Faculty of Technology Education
College of Human Resources and Education
West Virginia University

Herbert Todd Eachus
Assistant Professor, School of Education
University of Massachusetts

Arthur W. Eve
Associate Professor, School of Education
University of Massachusetts

James Gee
Graduate Student, Department of Linguistics
Stanford University

Richard Guttenberg
Research Assistant, Teachers College
Columbia University

William Johnson
Professor of Secondary and Continuing Education
School of Education
University of Illinois

Bruce Joyce
Professor, Teachers College
Columbia University

Lewis B. Mayhew
Professor, School of Education
Stanford University

Paul Mohr
Dean, College of Education
Florida A & M University

Maurice Olivier
Assistant Dean of Program Development
School of Continuing Studies
The University of New Hampshire

Donald E. Orlosky
Associate Director, Leadership Training Institute
Professor, School of Education
University of South Florida

Roger H. Peck
Associate Professor, School of Education
Southern Connecticut State College

Thomas H. Peeler
Director of Elementary and Secondary Education
Northeast School District
Dade County, Florida Public Schools

Jerome R. Shapiro
Director, Principal Leadership Training Program
(Right to Read Program)
Bank Street College of Education

B. Othanel Smith
Director, Leadership Training Institute
Professor, School of Education
University of South Florida

Francis Thomas Sobol
Assistant Professor, School of Education
Florida International University

Mari-Luci Ulibarri*
Chairperson of Elementary Education
School of Education
University of New Mexico

Philip Woodruff
Assistant Superintendent of Educational Practices
Westport, Connecticut Public Schools

---

*now, Mari-Luci Jaramillo

AVAILABILITY OF ORIGINAL FULL-LENGTH PAPERS

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ABSTRACT

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TOPIC: *"Literature Searches of Major Issues on Educational Reform."*

DESCRIPTORS TO USE IN CONTINUING SEARCH OF RIE AND CIJE:

*Educational Change
*Educational Innovation
*Literature Reviews
*Teacher Education
Inservice Teacher Education
Preservice Education

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[*] Asterisk(s) indicate major descriptors.

An abstract of "Variables of Institutional
Change at the Elementary and Secondary School
Level," by Arthur W. Eve

SUMMARY

Herein are discussed the individual human being, including his sense of competence and self-esteem, the relationship of authoritarianism to his receptivity to change, his values, his needs, his past experience, his feelings of threat, the effects of fear on him, his tendency towards self-fufilling prophecies, his tendency to distort information, his processes of attitude change, the relationship of social influence to his attitude changes, and his information seeking; the phenomenon of groups, including participation in groups, group cohesiveness, group resistance, the effect of conformity and social support on the behavior of individuals in groups, the effect of social integration and similarity of background, the effect of status, community norms, credibility, the effect of the legitimacy of a person's role on his acceptance by a group, and the effect of leadership on group activity; the phenomenon of organizations, including those forces that tend to restrain change within them and those forces which tend to support change; aspects of an innovation in general terms, including its intrinsic characteristics, its various sizes, and its various kinds; and linking agent roles, including conveyors, consultants, trainers, leaders, innovators, defenders, knowledge builders, practitioners, and users.

ERIC DESCRIPTORS

*Change Agents
*Educational Change
*Elementary Education
*Institutional Role
*Secondary Education
Social Change
Social Characteristics

THE TASK

What variables have been identified as crucial elements in the institutional change process at the elementary-secondary school level (forces from within and without)? What methods have been used to manipulate these variables?

INTRODUCTION

The traditional role that educators have played in preparing the youth of our nation for their future has undergone significant modification as a result of the increasing difficulty of predicting with any degree of certainty what life will be like when the present student groups become adults. Because of the rapid pace of change in our society, many educators, instead of preparing their students for existing roles, have begun to emphasize the development of those skills that appear to be associated with the learner's ability to adapt to an ever-changing environment. However, as educators have begun to restructure their educational processes in light of these and other concerns for the future of their students, they have discovered that relatively minor changes within existing elementary and secondary schools often become exceedingly complex and difficult undertakings, accompanied by unanticipated complications for even the most sophisticated innovators.

One of the difficulties experienced by educators who have attempted to innovate has been the prevailing information gap between the practitioner and the researcher in education. For the most part the practitioners involved in innovation do not have access to the information that has been collected by researchers who study change. This document is an attempt to compile information on those variables of institutional change that appear to be potentially of use to the educational practitioner. It is a result of a comprehensive search of the literature related to the following variables: a) the individual innovator; b) interpersonal relationships between the innovator, his colleagues, and others; c) the organizational context within which the change takes place; d) the innovation itself; and e) approaches and characteristics of the various linking agents who attempt to support the efforts of the educational innovator.

THE INDIVIDUAL

Underlying our entire understanding of institutional change is an implicit assumption that individuals, the human bits and pieces of an organization, form one of the key variables in bringing about organizational change. This chapter is a selected overview of those variables within the individual that seem most important when considering change in the schools.

Sense of Competence and Self-Esteem

Robert White in 1963 defined "sense of competence" as the "cumulative result of the whole history of transactions with the environment." He goes on to say that "in the mature adult the sense of competence may become well organized and differentiated with respect to different spheres of activity. We learn what we can and cannot do, and we may be satisfied to concentrate on the former" (30:39). Thus, an individual may be receptive or unreceptive to change on the basis of his sense of competence. "Self-esteem" is a characteristic closely related to "sense of competence" and may be described as the extent to which an individual values himself. Like "sense of competence," "self-esteem" seems to bear a relationship to willingness to innovate. According to Chesler (7), teachers with a fear of failure are more resistant to new practices than other teachers, while Lippitt et al. (21) suggest that those individuals who are unwilling to admit personal weaknesses also tend to resist change.

Authoritarianism and Receptivity to Change

In 1950, Adorno (1) outlined a theory that dealt with the authoritarian personality, which he claimed was the result of severe early childhood discipline. Among the research findings since then are the following: a) individuals with authoritarian personalities have less tolerance or feelings of ambiguity than other individuals, b) their selected perception enables them to block out information that they cannot reconcile with their original interpretation of a situation, and c) they are able to maintain their original interpretations of a situation for a longer period of time than nonauthoritarian types. It has also been found that teachers who have closed belief systems are less receptive to trying new educational practices than teachers who have open belief systems.

Values

Values are an individual's long-term, deeply held beliefs about the various significant factors in the world. Havelock (12) has said that an innovator should take the following six approaches to values when endeavoring to persuade others to innovate: a) put emphasis on those values which are shared by the source and the receiver, b) bypass, if feasible, the value issues, c) negotiate, d) explore the value issues, e) find key values and appeal to them, and f) respect value barriers.

Needs

Newcomb (26) and Marmor (22) and a number of others have pointed out that changes and innovations that require a modification of one of the important needs within an individual are likely to be rejected, while those innovations that require only modification of peripheral or less important needs are more likely to be accepted. Moreover, it appears that innovations will be more acceptable to individuals insofar as those innovations fit the psychological needs of the individual adapters.

Past Experience

Birch and Rabinowitz (4) have pointed out that previous bad experiences can exert a powerful negative effect on an individual's ability to become involved in productive problem-solving behavior. Similarly, past successful experiences with innovations may produce a tendency to accept further innovations of a similar type or types.

Feelings of Threat

Feelings of threat may emerge within an individual if his self-image is questioned, if required new behavior calls for unfamiliar elements, if a proposed change threatens his feelings of status, or if it threatens a position in which he feels contentedly secure. And upon emerging, such feelings may affect receptivity to change.

The Effects of Fear

It is somewhat of an oversimplification to link fear directly to the acceptance or rejection of specific innovations; however, when viewed in connection with other variables, it appears to be important.

Researchers differ as to the differential impact of various levels of fear on receptivity to change. Janis and Feshback (13) have demonstrated that lower levels of fear tend to have an even greater positive influence in changing the individual than extremely high levels and have suggested that perhaps a certain amount of defensiveness emerges in individuals when confronted with very fearful situations. Leventhal (18,19), however, has contradicted these findings with his own findings that higher levels of fear produce the greatest amount of change.

Self-Fulfilling Prophecy

Brickman has reviewed much of the literature on this subject and found that people who expect to fail are more likely to fail even when they succeed and want to succeed and, if they do perform well, they are more likely to discount the evidence of their success. He also found that (1) "people who expect someone else to fail are more likely to induce him to fail even when they intend him to succeed, and (2) if the other individual does do well, they are more likely to discount the evidence of his success" (5:38).

This combination of individual expectations and external expectations can prove especially devastating in the classroom where children are labelled early in their school career as being either "slow," "mentally retarded," or "problem children."

Distortion of Information

As a result of the individual's need for consistency in his own self-image, Rogers (28) states that individuals will sometimes distort information in order to maintain that consistency. And Festinger (10) has pointed out the process of information selectivity whereby an individual will seek out only information that supports the decision that he has already made. Thus it seems that individuals who have not yet made a decision are much more receptive and open to divergent information than individuals who have already reached a decision.

Processes of Attitude Change

If an individual who is asked to make a decision is given some leeway, some real choice, in making that decision, then he must justify the decision internally, to himself; and it is likely that his efforts to justify the decision will result in a real change in attitude on his part to conform with the decision. On the other hand, if he has no real choice in a particular decision, there is little likelihood that his decision will result in an attitude change.

Janis and Smith (14) have reviewed the literature on the subject and concluded that role playing, "side attacks" as opposed to frontal assaults, preparatory communications, and high exposure publicity can all help an innovator to overcome other people's attitudinal resistance to change.

Social Influence and Attitude Change

Kelman (15,16) suggests that if you want to bring about change through influencing an individual, you must take care in choosing your approach to that individual. He names basically three major approaches to choose from: a) the manipulation of rewards and punishments; b) identification (i.e., the person changing identifies very strongly with the source of information); and c) internalization (i.e., the recipient accepts an attempt to influence him because the information that he is receiving is similar to that contained within his own attitude and belief system).

Information-Seeking

One of the most important distinctions for those seeking to bring about change in schools is the manner in which individuals who are being asked to change go about seeking out new information for a specific area. Does the individual rely on his friends and relatives as opposed to more impersonal sources? Does he rely upon local sources as opposed to nonlocal sources? Carlson (6) has found that innovators tend to use nonlocal sources for their information while noninnovators tend to rely most heavily upon local sources of information.

THE GROUP

We here focus our attention upon the relationship between an individual and the other members of the various groups with which the individual interacts. Ten variables will be considered.

Participation

Participation has been one of the major emphases for the past decade in social action programs. There is research to support the validity of the notion that individuals who feel that they can influence decisions related to their work will be more satisfied with both the tasks required to perform that work and the product that is the result of their efforts.

Group Cohesiveness

Chin and Hadley (8) have said that the amount that members of a team can contribute is affected by the interpersonal climate the team creates and that a positive climate results from a blend of members' behaviors including their a) ability to recognize the need for maintenance and task functions and the skills to perform these functions; b) willingness to work for norms of openness, trust, and feedback; and c) achievement of a problem-solving rather than conflict mode of confronting and working with data.

Group Resistance

It is possible to overcome group resistance to a new innovation under some circumstances even when the group norms are initially opposed to such innovation. Chesler and Barakat (7), for example, found that teacher participation in decision making leads to a greater sharing of ideas, less alienation, better teaching, and greater receptivity to change.

Conformity and Social Support

Those individuals within the group who experience a very high degree of acceptance on the part of other group members have a tendency to disagree more openly with prevailing group norms and thus may be more innovative than others in the group.

Social Integration and Similarity of Background

One major variable in an individual's willingness to accept influence from another person is the similarity in attitude, culture, and behavior between the accepting individual and the person from whom he gets the information.

Status

If a person of lower status is convinced that the attempts of an upper-status person to influence him are legitimate (i.e., a normal part of the hierachical relationship), then the attempt to influence him is likely to be successful; but if the attempts are perceived as illegitimate, then the lower-status person is likely to resist.

Community Norms

When a member of a community experiences interpersonal relationships outside that community, the possibilities for innovation in his community are greatly increased.

Credibility

Credibility is an extremely important variable. In cases in which the source of innovation is both believable and reliable, there is a strong tendency for the receiving attitudes to be more receptive.

Legitimacy of Role

The legitimacy of an individual's role will assist substantially in acceptance of him as an information source. Moreover, greater role legitimacy is often granted simply as a result of the individual's higher position within the school hierarchy.

Leadership

Some leaders resist innovation and some do not. Those who are receptive to change can be of obviously great help to the change process.

THE ORGANIZATION

In this chapter, we are concerned primarily with those factors within an organization that tend either to support or to restrain the process of change within an institution.

Restraining Forces

Stability and inertia. There is a natural tendency in any organization to maintain stability within itself.

Role specialization. A tendency for discrete subunits to emerge from within the organization is prevalent in most large organizations and often results in the development of a range of barriers among the various subgroups, e.g., specialized languages, competition for material and human resources, widely disparate subgroup norms. Nevertheless, Aiken and Hage (2), among others, have pointed out that organizations which have many diverse subparts and specialization areas tend to be more innovative than those that do not. However, the innovations tend to cluster in one part or another of the organization. While innovations do not occur as often in organizational structures that are controlled from the top, they are brought about on a much wider scale when they do occur.

Perceived threats. School systems are particularly vulnerable to potentially negative forces from the external environment, especially during periods of rapid social change. Educators often react to this vulnerability by resorting to timid policies, secrecy, public relations efforts, and defensiveness.

Complacency. Local pride and the complacency that often accompanies that pride can be an effective barrier to change within schools.

Status and size differences. It sometimes happens that where a major status difference exists between two organizations, communications problems develop between the individuals of the two organizations.

Affluence and rewards. There is some evidence that barely solvent organizations have difficulty innovating while relatively well-to-do ones can afford to seek out and experiment with new discoveries. However, there is also some evidence that contradicts this thesis.

Training and assimilation. Too often, school system training programs inculcate an attitude of caution and maintainance of the status quo. Often they conflict with a new teacher's expectations and cause the new teacher frustration and disappointment.

Goal differences. Occasionally innovations are objected to because there is some conflict over whether or not a particular task or innovation falls within the goals of the school system.

Organizational structures. Within the organizational structure, employee preoccupation with status symbols can have a significant restraining influence on the spread of innovation.

Leadership behavior. Since the leader within a particular organization often serves as a model for subordinate behavior, he can serve as a significant deterrent for change within an organization.

Supportive Variables

Rewards. Although one of the most common stimuli for change in the world of business is the potentiality of financial reward and fear of profit loss, such reward systems are not as clearly supportive of innovation within the field of education. Part of the problem in using rewards in education is based upon the difficulty of measuring improvements. On the other hand, certain educators, especially the most ambitious ones, are extremely susceptible to reward stimuli.

Leadership. Leadership personnel within school systems can exert potentially powerful support for change within education. The leader can establish an open climate, structure the internal reward system so that it supports change, develop or purchase effective training programs, and perform a wide variety of other supportive activities.

A number of studies point out that a periodic change of leadership is especially useful in promoting innovations.

Crisis. Real or imagined crises within the organization can stimulate the seeking out of new ideas and approaches to help the organization meet those crises. However, continual usage of the same crisis management technique over a period of time may result in a significant loss in its effectiveness as the organizational members become accustomed to living in a state of ambiguity brought on by the perception of crisis.

Competition. Some authors point out that competition as a perceived stimulus for change is largely a myth.

Training. In-service training within a school district can be one of the most supportive or most restraining variables for change in that school district. School systems can support change within their districts by encouraging personnel to attend conferences, visit other school districts, or otherwise interact with people from outside the district.

Alternative structures. By invading the educational territory that was previously dominated in an exclusive manner by the existing public school structure, emerging "outside" organizations can exert a significant influence on existing school organizations.

Importing human resources. School systems can utilize their purchasing power to employ new persons who already possess the knowledge needed to advance a specific innovation.

Openness. Open organizational climates that contain supportive interpersonal relationships, mutual trust among various employees, and free systems of communication also tend to support innovation.

Values of the positive image and shared perception. To a certain extent, the school system may be able to encourage innovation and change by promoting an image as a progressive and innovative school system. The innovative image may eventually become a self-fulfilling prophecy, i.e., teachers are innovative because they are expected to be innovative.

Groups. One traditionally effective way of overcoming resistance to change within an organization is to establish a routine pattern of meetings of various groups within the organization. This practice has been referred to as "institutionalized interaction" by Guest (11). Moreover, by setting up a number of groups with overlapping membership, it is possible to enhance the flow of ideas from one subgroup to another.

Job rotation. Several authors suggest that job rotation may be another way to encourage communication of new ideas within an organization.

Link-pin specialists. Bennis (3) has suggested that, in the future, leaders may be replaced by "link-pin specialists" whose primary function is to facilitate the flow of knowledge from one subunit to another. Such link-pin specialists could well facilitate change.

Restructuring. A logical extension of the idea of overlapping groups and developing new roles is the concept of completely restructuring the existing organization as a means of facilitating innovations. Differentiated staffing is a recent example of restructuring.

Decentralization. Although decentralization has been suggested as a means for increasing the capacity for information flow, it has also resulted in restriction of information sharing between the various subparts of the decentralized organization. Nevertheless, researchers continue to extol its virtues, especially for the promotion of innovation.

Geographical arrangements. Both physical distance and proximity among teachers can become a means for increasing or hampering communication and interaction among groups.

Social engineering. Social engineering, as used by Rice (27) and Marrow (23), refers to the impact of two variables (the social grouping of organization members and the work flow within the structure) upon behavior, task accomplishment, and knowledge flow. Its relevance to stimulating change in education is apparently uncertain.

THE INNOVATION

In this chapter are discussed selected characteristics of an educational innovation that seem to be crucial variables in whether or not a particular change or innovation is adopted by school systems. In categorizing these characteristics, it is helpful to distinguish between intrinsic ones and extrinsic ones.

Intrinsic Characteristics

There are five major intrisic characteristics of an educational innovation: a) its scientific basis, b) value loading, c) divisibility, d) complexity, and e) communicability.

Scientific basis. According to researchers, knowledge can be classified as being scientific if it has a high degree of reliability, validity, internal consistency, congruence with other scientific theories, and generality. Scientific status has apparently been a positive factor in the adoption procedure of some educational innovations, e.g., PSSC physics.

Value loading. Most innovations contain implicit or explicit value messages. As a result of the value loading of a specific innovation, it may be more or less acceptable as a new innovation within a particular school district. Thus, the old Dick and Jane readers were for a long time quite acceptable to middle-class students, teachers, and parents.

Divisibility. Rogers defines divisibility as "the degree to which an innovation may be tried on a limited basis" (29:131). Those innovations that are adoptable on a limited basis (in terms of either scale or time period) are much more easily disseminated than innovations that do not possess this divisibility.

Complexity. Rogers has defined complexity as "the degree to which an innovation is relatively difficult to understand and use" (29:130). Kivlin (17) has suggested that there is a negative relationship between rate of adoption and complexity of a particular innovation. However, perceived complexity is more significant than objective complexity.

Communicability. Communicability is the combined effect of a number of characteristics that are inherent within an innovation that make it relatively easy or difficult to explain or demonstrate.

Extrinsic Characteristics

Extrinsic characteristics--compatibility, cost factors, and material and nonmaterial rewards--have meaning only in relation to the individuals who implement an innovation or to the environment in which it is implemented.

Compatibility. Compatibility has been defined as "the degree to which an innovation is consistent with existing values and past experience of the adopters" (29:126). Sometimes an innovation is acceptable (e.g., the use of teacher aides) because it is compatible with a previously accepted innovation (e.g., team teaching).

Cost factors. Cost factors include initial cost, cost of tryout, cost of maintenance, overtime, risk, and trouble to make the investment. Rogers (29) has suggested that "relative advantage" of an innovation can be determined (at least theoretically) by examining both cost factors and reward factors (discussed in the next paragraphs) relating to any given innovation. Thus, by comparing the cost inherent in the adoption of a particular innovation with the rewards that he expects to receive from adopting that innovation, the educator can reach a general assessment of the relative advantage of adopting any given innovation.

Material rewards. Although material rewards and savings that are the result of innovations are much more visible in the area of business than they are in education, the prospect of material rewards and savings has been utilized as a rationale for introducing some innovations within education.

Nonmaterial rewards. For a teacher, the anticipated psychological pleasure of being more effective in the classroom, as well as being highly regarded by central office administrators who are promoting a particular innovation, may be an important and influential variable in the adoption of new classroom teaching methods.

Knowledge as It Affects the Receiver: The Adaptive Demands of Different Kinds of Message Inputs to the User

One very effective way of understanding the special characteristics of an innovation is to analyze the change that it requires of the receiver or implementer of that innovation. We will attempt to focus on two categories: how much change is required of the receiver and what kind of change.

How much change. The amount of change in the areas discussed below not only affects the individuals involved but also is an important factor in analyzing an innovation.

Change in size and scope of operation. Wilkening (31) has pointed out that the change in magnitude of the operation may have a significant impact on the life style of the individual involved in that change. Consider, for example, a regionalization effort among a number of small school districts or the establishment of team teaching programs.

Acquiring new skills. For the most part, the acquisition of new skills necessary for the adoption of specific innovations is a hit-or-miss affair in education. However, even when in-service education opportunities fail to prepare a teacher to be a more effective implementer of the innovation, they still usually succeed in instilling a certain sense of self-confidence that is important psychologically to a teacher.

Changing goals. Many educational innovations either explicitly or implicitly require a teacher to modify his goals in order to implement the innovation. The amount of modification required is significant in analyzing the nature of the proposed innovation.

Changing values and orientation. The degree to which an innovation requires major shifts in the more generalized "life space" of the educator who implements it is a significant factor in analyzing the nature of the innovation.

What kinds of change. Within this category, it is necessary to move still further into the psychology of the implementer, in order to ascertain the specific types of learning and unlearning processes which may be involved in adoption of an innovation.

Substitution. The most readily acceptable type of innovation is one that is perceived as a replacement for an existing item that was adopted at some earlier time; for example, the adoption of a new reading program.

Alteration. A number of educational innovations consist primarily of alterations, changes, or modifications in existing structures rather than complete substitution of parts or elements within that structure. Although perhaps in some cases these innovations are adopted more readily than others, it also sometimes happens that they are not adopted, simply because it is not considered worth the extra effort required to switch over.

Addition without changing old elements or patterns. According to Miles (24,25), innovations which can be added to an existing program without seriously disturbing other parts of it are likely to be adopted.

Restructuring. The term "restructuring" is typically used to refer to changes in the material or psychological structure of the receiving organization or individual. In terms of material or physical changes, restructuring could simply mean a rearrangement of working space. An example of restructuring would be team teaching.

Eliminating old behavior. Some innovations are simply changes that eliminate existing practices and behaviors, e.g., putting an end to corporal punishment.

Reinforcement of old behavior. This is very likely the easiest kind of innovation to adopt, because it consists primarily of communicating knowledge which reinforces what the receiver is already doing. For example, a teacher who had been regarding herself as a resource for student self-directed learning and had proceeded to work with students for years under this arrangement would probably regard the introduction of "learning by discovery" methods of teaching as a reinforcement of her previous behavior. A significant problem with this particular type of reinforcement, however, is the individual who selectively perceives some element of a new innovation as reinforcing an old style of behavior and utilizes that selective perception as a means for not examining the new innovation any further.

LINKING AGENT ROLES

Any consideration of the variables influential in changing education at the elementary and secondary level must include a discussion of the special linking roles that are provided by the wide range of change agents emerging on the educational scene. Havelock, in Eidell and Kitchell (9), outlines their responsibilities in terms of retrieving knowledge, deriving practical implications from it, and distributing it. Among the various linking agent roles that will be discussed are the conveyer, the consultant, the trainer, the leader, and the innovator himself.

The Conveyer

The conveyer is a change agent who simply receives new knowledge from expert sources and passes that knowledge on to the nonexpert potential users of the knowledge. For the most part, this function is not valued highly by either researchers or practitioners, and, as a result, the conveyer role presents problems to those individuals who would like to fill that role exclusively. In education, the textbook salesman is a good example of a conveyer.

The Consultant

The consultant has been referred to as a facilitator, objective observer, and specialist in the diagnosis of needs, identification of resources, and retrieval of information from expert sources. For the most part, the consultant tells how to do something, as opposed to the conveyer who tells what something is about.

During the past two decades, the National Training Laboratory has developed a slightly different concept of consultation, which involves a "change agent." A change agent consultant is flexible in terms of what advice he gives, depending on client self-diagnosis and problem definition. Primary emphasis is often placed on assistance in client diagnosis through self-surveys and the like.

The Trainer

The most common trainer role in the field of education is the university professor. For the most part, the training of educators is seen as something that occurs before a career begins.

The Leader

It has often been noted that leaders have a significant impact on the adoption of new innovations. Lewin (20) has pointed out that a leader often acts as a "gatekeeper," an individual who can control information flow in and out of a particular organization primarily on the basis of his influential position. However, sometimes a person low on the school's organizational chart, e.g., the school secretary, is the most powerful gatekeeper in the school. Still another significant internal leadership role, that is different from both the formal leader and the gatekeeper, is the "opinion leader." The opinion leader is typically an individual who repeatedly influences other members of his own group on a number of different innovative issues.

The Innovator

The innovator is the first person within the organizational structure to implement a new innovation, and, although the innovator may emerge as an opinion leader, there are other distinctions that should be noted between the two roles. For example, innovators often serve as an innovation testing service for the real opinion leader, under circumstances in which the opinion leader is reluctant to lend his reputation to an untested innovation.

The Defender

The defender is he who ordinarily champions the client against the innovation. He discovers and points out all the reasons for not adopting a particular innovation, all the problems and difficulties that adhere in it. This role is not purely a negative one, however. It is, of course, helpful to have the difficulties ironed out of a proposal; and the defender is not always dogmatically against change.

Defenders may function effectively in a number of ways, including the following: a) sensitizing clients to important value concerns, b) causing a rediagnosis of needs, and c) mobilizing public opinion regarding certain products or services (e.g., Ralph Nader).

Knowledge Builders as Linkers

A variety of different knowledge builders can serve effectively as linking agents between the research arena and the working world of the practitioner: scientists, "futurists," engineers, and research and development managers.

Practitioners as Linkers

The practitioners can themselves be viewed as linking agents when their clients (the students) are thought of as the ultimate user of the innovation.

The User as Linker

In order for the user to function as his own linker, he must obtain or possess the following three items: a) knowledge of resources, b) access to these resources, and c) ability to diagnose his own needs. It is not likely that a major part of the population in the near future will be able to function in that capacity.

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An abstract of "Elements of
the Institutional Change Process,"
by Lewis B. Mayhew

19

SUMMARY

Herein are discussed the conditions which, if met, appear to be favorable to change in institutions of higher education; some of the barriers to change in institutions of higher education; the effectiveness of a number of specific devices for change in higher education; the categories of change that are open to colleges and universities and the broad techniques and strategies that have or have not worked in bringing change to them; and finally, generalizations on the innovative process.

ERIC DESCRIPTORS

*Change Agents
*Educational Change
*Educational Innovation
*Higher Education
*Institutional Role
Educational Development

THE TASK

What variables have been identified as crucial elements in the institutional change process at the higher educational level? What methods have been used to manipulate these variables.

CONDITIONS FOR CHANGE

Discovering which elements determine whether or not an institution of higher education can make significant changes in its program has really never been tested experimentally. However, it is possible to derive from much case material a number of conditions which, if met, appear to be favorable to change.

The first, and in many respects the most significant, of these conditions is the presence of presidential or strong administrative leadership. A second condition is simply the presence or absence of technically competent people who can operate effectively a changed procedure. A third and somewhat amorphous condition, which is nonetheless of critical significance, is simply the matter of institutional readiness.

The matter of adequate financing should be an obvious condition, yet in the recent past it seems to have been ignored or overlooked or underemphasized in a number of attempted changes.

A difficult condition to describe is institutional ethos. In some institutions effective change is continuously made, largely because change and experimentation are generally accepted and expected. Also, no substantial innovation or change in collegiate institutions will happen unless the involved people have enough time at their disposal to plan the change and to put it into effect adequately.

A highly important condition which must be met, if innovation or change is to be effective, is the necessity of a payoff to those involved. For instance, if a new curricular device is to be accepted enthusiastically by students, there must be a payoff for them in the form of a radically different sort of experience, a substantial saving in time, or significant recognition and visibility.

An obvious, but frequently uncontrollable, condition for the success of innovation and change is the simple continuity of people involved in the program. Another, little understood, condition affecting success or failure of innovation is the degree of consistency the proposed change has with existing institutional structures and practices.

Of a somewhat different order is the condition of adequate publicity given an innovation or change. This can be a tricky matter: sometimes publicity makes it necessary to continue an innovation beyond the time of its worth.

Also potentially dangerous but still an important condition is the use of oligarchs or powerful and influential faculty members. Of a similar order is the matter of administrative placement of individuals charged with putting into effect change and innovations. Of a different order, but one of the four or five most significant conditions governing the success of innovation and change, is the state of the particular art involved.

There are undoubtedly other conditions which would operate with varying intensity to facilitate change. These, however, appear to be the most influential; and of these, several seem of paramount importance. Administrative leadership and support appear time and again in discussions of innovation as the most significant variable. But beyond this, institutional readiness, adequate financing, the general state of the art of the innovation, and the technical competence of the individual charged with operating the change seem the most central.

BARRIERS TO CHANGE

The processes by which institutions of higher education change and innovate may also be understood by examining some of the barriers to change. Hefferlin's (1) elaborate study of institutional vitality lists several broad categories. The following characterizes complex organizations generally, of which institutions of higher education are clearly examples:

> Organizations are inherently passive in contrast to congeries of individuals who do not interact or to crowds that interact only transiently. Organizations consist of patterns of repetitive and continuing interaction, patterns of coordinated and ordered behavior.

He goes on to say that "voluntary organizations attract members who agree with their activities. Organizations are self-selective. Their members recruit others who appear to be compatible with them and new recruits join the organization because they approve of its goals."

Additional factors work against change. Organizations tend towards institutionalization and ritualism. "Organizations that are livelihoods for people tend to come to exist only as livelihoods for these people." And finally, "the maintenance of institutional effectiveness or achievement is only one problem that organizations must face in order to survive. Other problems may take precedence over it."

In addition to these broad categories of barriers which inhere to complex organizations generally, there are other sorts of barriers more idiosyncratic to colleges and universities. For example, "their purposes and support are basically conservative. Schools and colleges are essentially devices for the perpetuation of culture." Also, the educational system is vertically fragmented. Undergraduate colleges are trapped between the lower schools and the graduate schools. They are caught between the competencies of their applicants and the expectations of employers and graduate school admissions officers.

Within higher education, institutional reputation is not based on innovation. Faculty members, too, have little concern for changing teaching methods. "The ideology of the academic profession treats professors as independent professionals. Professors tend to think of themselves as biologists or historians who associate themselves with an institution in order to practice their profession. Finally, "academic institutions are deliberately structured to resist precipitant change. . . . most colleges and universities operate through a series of review and approval mechanisms. . . . all of [which] are designed to slow down the process of change and to insure that no vested interest is seriously jeopardized."

These broad categories of barriers to innovation and change are exemplified and elaborated by a number of specific barriers. After enumerating these, it should be possible to infer which modifications should or could be made to facilitate change.

One specific barrier is that institutions reflecting a high degree of collegial governance are not likely also to exhibit rapid or radical educational change. An institution which is so organized that every potentially interested agency has a review function over proposed change will so slow up the process that virtually nothing happens. In spite of this, it is also true that failure to involve those who will be intimately affected is a substantial barrier to educational innovation and reform.

Institutional success and professional self-satisfaction are serious obstacles. Clogged and confused channels of communication and administration are also frequently found as barriers to educational change.

Polarization of faculties into political factions, regardless of the issue, is likely to be restrictive with respect to educational innovation and change. Dishonest or unwarranted claims for the values or successes of innovations will also discredit the whole matter of change and innovation.

The failure to appoint necessary and competent administrative leadership needed for a change and the failure to provide adequate time and resources necessary for the project are key barriers to educational reform. Finally, a barrier frequently encountered in privately supported, church-related colleges is the conflict between needed change and reform, on the one hand, and existing institutional ideology, on the other.

In addition to these somewhat discrete barriers, there is a series of factors which has been observed during recent years as limiting or rendering unsuccessful a number of different kinds of innovations. First among these factors are personal animosities among people who must be intimately involved in a change project. Of perhaps even greater significance and of even less predictability is the matter of institutional preoccupation with other and frequently disturbing matters. Of a different order is the lack of mechanism or lack of willingness to disseminate information about innovative activities.

There is another factor, quite difficult to interpret, yet seemingly involved in the failure of innovation and change: institutional or individual uncertainty as to the true goals of an innovation. Lastly, and of enormous significance, is the failure of so many institutions to provide for carefully contrived evaluation or assessment programs at the time innovations are attempted.

DEVICES FOR CHANGE

Against the context of conditions favorable to innovation and change and the conditions that are barriers to reform, the effectiveness of a number of specific devices can now be examined.

The first, and probably the most prevalent, attempt to bring about broad institutional modification is the use of some form of an institutional self-study.

Institutions have recently created centers for the improvement of instruction, designed specifically to facilitate experiment in change, especially in undergraduate education. They have been assigned several functions: to encourage and aid faculty members in changing curricula or modes of instruction, to facilitate approval of ad hoc courses, to disseminate information about innovation and change, and to conduct experimentation themselves. The evidence is thus far rather spotty as to how these organizations have fared.

An administrative office which evolved somewhat earlier than the centers for improvement of instruction, and which possesses considerable potential for bringing about changes in institutions, is the office of institutional research (together with the related testing office or office of evaluation studies). Generally, offices of institutional research are charged with generating and reporting a variety of kinds of data upon which decisions could be based, encouraging faculty members to conduct studies of their educational efforts, conducting large-scale studies of significance to the institution, calling to the attention of the administration and faculty relevant data and studies completed elsewhere, and advising faculty and administration with respect to needed information. However, the evidence that these offices have been responsible or influential in bringing about institutional change is not readily available.

A widely used device to facilitate change and innovation is the outside team of consultants or consulting firm. Again, the evidence as to effectiveness is episodic and somewhat inconsistent.

Philanthropic and government grants represent a large attempt to bring about institutional change; and while a considerable amount has been written concerning the subject, evidence as to effectiveness is far from conclusive.

A technique for bringing about major change--over which opinion is still largely divided--is the use of pilot studies or pilot efforts, in hopes that if they succeed they will provide a leavening for a much larger educational mass.

Voluntary accreditation in higher education is a distinctively American phenomenon and originally was intended to protect the public by ensuring that institutions met minimal standards of competency. In spite of consistent criticisms, regional accreditation, at least, must be judged to have performed that role at least adequately. Presumably, the power to affect minimal standards of competence is also a force which could bring about still further change in institutions if it were adequately deployed. With a few notable exceptions, however, the evidence does not indicate that such a power has actually been used.

A technique for effecting change which possesses an obvious rationale is travel, including the visitation of other institutions by the faculty or administration charged with bringing about change. So obvious is the rationale that there has been little consistent theorizing as to how well visitation has contributed to change.

Since 1957 there has been a nationwide movement within higher education for the states to create coordinating councils or committees or other forms of suprainstitutional boards of control, to facilitate statewide accumulation of data, to insure better deployment of state resources, and to effect educational economies. There can be no doubt that the suprainstitutional agencies have altered the character of higher education. But available evidence suggests that they have been more retarding than encouraging of educational innovation and change on individual campuses. They have typically added one or more administrative layers through which innovations must pass before adoption, and they seem to have imposed a kind of orthodoxy which would discourage an individual campus from varying too much from a presumed norm.

Similar to coordinating councils with respect to some purposes are consortia and other cooperative arrangements, chiefly among privately controlled institutions. The anecdotal evidence suggests that consortia have produced quite a rich yield in changed educational practice.

In large part responsive to student criticism, institutions have created new administrative offices directly responsible for watching over and helping improve undergraduate instruction.

A minor device but one of considerable potency for bringing about instruction or curricular change is to modify requirements in such a way that something approaching a free market can force change.

A much-used technique for focusing faculty attention on educational matters and, hopefully, bringing about change is the use of fall faculty conferences and faculty seminars. A variant on this is the faculty retreat. There is considerable logic here and some evidence of success with these schemes.

Reports from national associations and proceedings from national conferences present a particularly mixed picture with respect to producing institutional change.

Quite a few, especially of the smaller, privately supported institutions, have attempted to bring about innovation and change through what might be called bibliography. This consists of maintaining faculty reading rooms and circulating books dealing with education, even to the point of preparing digests resembling news bulletins of promising new developments. Impressionistic evidence suggests this is not a very fruitful kind of activity.

Beyond question, one of the most potent devices for bringing about academic change, innovation, and reform is the manipulation of the faculty reward and incentive structure. This should not be construed to mean only dollar remuneration, because faculty members obtain rewards in many different ways.

Boards of trustees have the legal power to bring about changes. However, for the most part, boards of trustees have refrained from interfering in what is presumed to be the proper province of faculty judgment; and experience would suggest that this tacit policy is wise.

The outbreak of student dissent from 1964 to 1970 revealed that prevailing systems of academic governance were, for the most part, incapable of responding to emergency conditions and bringing about demanded change in educational practice. Since those upsets, various forms of governing structures have been experimented with, a common one of which is a representative faculty senate with a full complement of committees designed to bring about changes as they are needed. In 1971, these experiments are too recent to make any valid judgments.

Recently, considerable argument has been exerted in favor of something called cost benefit analysis, which for the first time allows an institution to determine how much of its resources are going for various statistics classes, for example. Once these figures are available, it may be possible for institutions to force decisions on the basis of comparing educational value to cost for various programs. In theory, this could be a powerful tool; but in the summer of 1971 there is not one institution in the country which has yet perfected a cost benefit analysis system. Hence, there is no real experience on which to base an assessment.

An enigma is the question of how influential or effective the use of students in bringing about significant educational change has been. Professors have testified that students' attendance at committee meetings has deteriorated over the past 18 to 24 months and that students as a sustained creative force for change are not likely to be a reality.

Lastly, another technique of change is the various centers for research and development in higher education, whether they be federally or privately financed. These centers have been charged with finding research answers to the problems of practice which plague higher education and to disseminate information about the results so that institutions can indeed change. However, the ignorance about the findings of research centers among average faculties in most institutions visited indicates that, at this point anyhow, key findings have not found their way into the mainstream of educational practice.

CHANGE IN HIGHER EDUCATION

Having considered the conditions for change and potential barriers, and having commented on some of the techniques or strategies being employed to bring about change, the phenomenon of change may be examined by considering categories of change open to colleges and universities and by indicating broad techniques or strategies which have or have not worked.

Most changes in the practice of higher education in the United States can be subsumed under six broad headings. The first of these, and by far the most difficult change to accomplish, is to change the essential nature of tasks to be performed. A second, similar broad category consists of modifying the scope or mix of effort in which an institution engages itself within the public sector.

The third broad category of change includes any change in the teaching or learning techniques of higher education, whether these be developing interdisciplinary courses, modifying the lecture system, or increasing the use of computers or television.

The fourth consists of any change in the aggregate organizational system of higher education, whether this be a revision of a local system of governance or the creation of a statewide system of higher education.

A fifth major type of change is even more difficult to analyze. This would include changes in the environment or ecology of higher education, including evolution of competing learning institutions and changes in the relationships among institutions in the same region.

A last major sort of change concerns modifications in the methods of financing higher education.

Subsumable under these broad rubrics of change are a number of specific changes, each requiring somewhat discrete techniques and strategies to accomplish. Since virtually all institutions in the country are now or have been or will be struggling to bring about such changes, the analysis of change technique must be highly selective and somewhat impressionistic.

Specific Changes

Eliminating curricular material. This category refers to eliminating duplicated material, historical accretions of little current significance, and various cultural requirements that seem to have lost support and to reducing the number of years required for certain kinds of professional training.

Adding new curricula. New curricula have been proposed to meet current urgent social needs (increased relevance). They would relate to personal development, awareness, sensitivity, life style, personal value systems, communal living, community affairs, and problem-oriented courses dealing with critical social issues.

Eliminating certification and grading. These activities may not be educational; the burden of evaluating students might be shifted to those agencies (business, government, graduate schools) that desire the evaluation.

Reorganizing students and faculty. Of all the currently attempted innovations, reorganizing and regrouping students and faculty seem to be potentially of the greatest significance in improving education; yet these entail some of the most difficult problems to solve.

Increasing hardware and self-instruction.

Fragmenting courses. This proposal contemplates that most courses would be very short (2 to 4 weeks) and that many would be mechanized. The object is to give a student a wide opportunity to chart a personal path for his chosen educational objectives.

Promoting consortia.

Integrating education and work experience. Such integration is intended to connect better a person's education to his career and to encourage a pattern for continuing education that may reduce obsolescence.

Increasing student participation in administration.

Increasing teaching rewards. An improvement in the teaching image will stimulate greater attention to the quality of teaching.

Improving management to increase the efficiency of university operations.

Concentrating on learning tools. Minimizing efforts to transfer factual information into the student's head will transform the student as rapidly as possible into his own teacher.

Matching students better with colleges. Better guidance and channeling methods will lead to reduction in apathy, disorientation, and the number of dropouts.

Increasing student body, enrolling more students, and retaining longer those that do enroll. This strategy is intended to increase efficiency under the assumption that marginal cost will be smaller than average cost.

Introducing innovations. Experimentations include classrooms without walls, the offering of most freshmen courses and many higher level courses over a nationwide TV network, and the awarding of credit by examination.

GENERALIZATIONS

Ideally, this final section should present a number of elaborate case studies. However, space would preclude, and the lack of availability of sufficient volume of case material deny, that option.

Hence a series of generalizations on the innovative process is offered instead:

1. The process of innovation varies with the nature of change;
2. The process of innovation varies with the source of the initiative;
3. The course of innovation varies with its timeliness;
4. The supporters of an innovation (and those who oppose innovation) have many and sometimes divergent motives;
5. A promising technique for the introduction of a climate for cooperative change is the creation of a "temporary system";
6. Acceptance and implementation of an innovation is facilitated by early involvement in its design;
7. The first step in enlightened innovation is to move from sensing a problem to diagnosing its causes;
8. Most educational innovation is imitation of a bellwether's actions;
9. Change in any part of a system is likely to have effects on other parts;
10. Efforts to introduce innovations in higher education emphasize rational considerations and often ignore other dynamic factors;
11. An innovation must reach a required size before it is viable and before it has much influence on the rest of the system;
12. Innovations typically proceed more slowly than might be generally expected, with good results taking a long time to achieve;
13. Too few innovations are carefully evaluated; and
14. Innovations accepted and established become as resistant to change as were their predecessors.

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An abstract of "A Study of
Educational Change," by Donald E.
Orlosky and B. Othanel Smith

SUMMARY

Herein are discussed the task of identifying ideas for educational change, the task of rating the effectiveness of these ideas, and the task of attributing the various successes and failures to particular factors; the procedures involved in accomplishing these tasks; the findings that resulted from these procedures; factors both inside the educational field and outside it that significantly affect educational change; some conclusions about the change process in education; and the induction and management of change.

ERIC DESCRIPTORS

*Change Agents
*Educational Change
*Educational Development
*Educational Innovation
*Evaluation

THE TASK

Over the past 30-70 years, numerous change-oriented ideas have been advanced in the educational arena. Which of these did and which of these did not result in educational change? What are the factors which can be identified as being related to the failure of an idea to become established practice? And, conversely, what are the factors that can be identified as being related to the success of an idea in becoming established practice?

THE TASK: ITS SCOPE AND DIFFICULTY

The purposes of this report are to identify ideas for educational change, to examine the efforts that have been made to establish these ideas in practice, to rate these efforts as either successful or unsuccessful, and to attribute the various successes and failures to particular factors.

The substance of this report is limited by the operational definitions we have employed and by the ground rules we have utilized. These definitions and ground rules have been adopted from the literature in the social sciences; their usefulness is limited by the fact that relatively little research has been conducted by social scientists to determine the instrumental factors associated with change in social institutions. Another problem arises out of our attempt to identify significant ideas for change when the criteria for their selection have not been determined for us. Still another uncertainty develops around the relativity of the terms "success" and "failure."

PROCEDURE

The procedure of this study consists of the following steps: fixing the period of time this survey of change is to cover, selecting and describing the changes to be included in the analysis, deciding upon the categories into which the changes are to be classified, classifying the changes, and discussing the relationship between the changes and the factors associated with them.

This study covers the period 1895 to 1970. The 1895 cutoff was chosen because 1895 represents approximately the date a) when the public schools received the heaviest influx of south and east European immigrant children and thereby became responsible for the first time for a new and difficult obligation to acculturate children; b) when the frontier was closed, thus turning the country back in on itself and necessitating a greater emphasis on education as a means of equipping people to make a living; and c) when the schools experienced a rapid increase in enrollment. Moreover, 1895 was approximately the date that graduate study in the field of education became a significant discipline and when scientific educational study began.

The specific changes which make up the list for analysis in this study are those to which reference has been made in such sources as histories, dictionaries, and encyclopedias of education.

The two basic categories of change, decided on partly intuitively and partly empirically, are a) changes which originated outside the school system and b) changes which originated inside the school system.

FINDINGS

Four classifications have been used to categorize changes according to the degree of success or failure attributed to the changes. The symbols used and the descriptions for degrees of success are the following:

4--A change that has been successfully installed and has permeated the educational system,
3--A change that has been successfully installed and is sufficiently present that instances of the change are obviously present,
2--A change that has not been accepted as a frequent characteristic of schools but has left a residue that influences educational practice, and
1--A change that has not been implemented in the schools and would be difficult to locate in any school system today.

The changes were also classified according to the element in the educational system that was the focus of change: instruction, curriculum, or organization and administration. The three categories and their symbols as employed in this section are as follows:

A--Instruction,
B--Curriculum, and
C--Organization and Administration.

Moreover, changes have also been classified according to whether they originated inside or outside the school setting. The symbols for these classifications are

I--Internal origin, within the educational field; and
EX--External origin, outside the educational field.

TABLE 1. CHARACTERISTICS OF CHANGES THAT WERE SUCCESSFULLY MADE IN THE SCHOOLS

Changes	Source	Rating	Focus
Ability grouping	I	3	A
Adult education	EX	4	C
British infant school	I	3	B
Carnegie unit	I	4	C
Compensatory education	EX	3	B
Compulsory school attendance	EX	4	C
Conservation education	EX	3	B
Consolidation of schools	I	4	C
Desegregation	EX	3	C
Driver education	EX	4	B

TABLE 1 (Continued)

Changes	Source	Rating	Focus
Elective system	I	4	B
Environmental education	EX	3	B
Equalization procedures	I	4	C
Extraclass activities	I	4	B
Guidance	I	4	A
Head Start	EX	3	C
Home economics	EX	3	B
Individually prescribed instruction	I	3	A
International education	I	3	B
Junior college	I	4	C
Junior high school	I	4	C
Kindergarten	I	4	C
Linguistics	I	3	A
Look-and-Say method	I	3	A
Media and technology	I	4	A
Microteaching	I	3	A
Middle school	I	3	C
New leadership roles	I	4	C
Nongraded schools	I	3	C
Nursery school	EX	3	C
Open classroom	I	3	A
Phonics method	I	3	A
Physical education	EX	4	B
Programmed instruction	I	3	A
Safety education	I	4	B
School psychologist	I	3	C
Self-contained classroom	I	3	C
Silent reading	I	4	A
Social promotion	I	4	C
Special education	I	4	B
Store-front schools	EX	3	C
Student teaching	I	4	A
Testing movement	I	4	C
Tests and measurement	I	4	A
Updating curriculum content	I	3	B
Vocational and technical education	EX	4	B

TABLE 2. CHARACTERISTICS OF CHANGES THAT WERE NOT SUCCESSFULLY MADE IN THE SCHOOLS

Change	Source	Rating	Focus
Activity curriculum	I	2	B
Community school	I	2	B
Core curriculum	I	1	B
Creative education	I	2	B
Dalton plan	I	1	A
Flexible scheduling	I	2	C
Midyear promotions	I	1	C
Platoon system	I	1	C
Project method	I	2	A
Sensitivity training	I	2	A
Sex education	EX	2	B
Team teaching	I	2	C
Thirty-schools experiment	I	1	B
Unit method	I	2	B
Unit plan	I	2	A
Visiting teacher	I	2	A
Winnetka plan	I	1	A

The following observations might be made with respect to the data represented in these tables. Internally stimulated changes (I) outnumber externally stimulated ones (EX) by 3½ to 1; however, external ideas have had a higher success percentage (93 percent) than internal ones (64 percent). It appears that when an idea has the support of groups both outside and inside the schools, the probability of success is high. The lower percentage of successful attempts with ideas originating inside the schools is likely due to the larger number of attempts that have originated from these ideas.

"Permanent" or well-established changes have most frequently come about in the organization and administration of the schools.

When changes have required the removal of an existing approach, or when changes have been presented in an "all-or-nothing" manner, their chances for success have been reduced.

When changes originating within a school system have been placed in only a small number of schools in proportion to the total educational enterprise, they have seldom become significant permanent changes. The Winnetka plan, Dalton plan, and Platoon system are cases in point.

OTHER CONSIDERATIONS

Factors inside the educational field that significantly affect the existence and nature of educational change are a) educational research, b) school personnel, c) educational commissions and committees, and d) professional and extralegal organizations.

Factors outside the educational field that significantly affect the existence and nature of educational change are a) the local, state, and federal governments; b) the courts of these governments; and c) society in general.

CONCLUSIONS

No major aspect of the educational system has been exempt from change during the past 75 years.

About 75 percent of the changes studied in this report were successfully implanted. The 25 percent that failed, together with other potential changes that were thwarted so early that they do not even appear in the literature, suggest that there have been enough both of failures and of successes to cast doubt on our current ability to predict success or failure for a given change. At the present time there is no "sure thing."

On the basis of the data obtained in this study, the following statements seem warranted:

1. Changes in methods of instruction are apparently more difficult to make successfully than changes in curriculum or administration.

2. Changes in instruction are more likely to originate inside the educational profession than outside of it. In no case in the past has a successful change in instruction come from outside the realm of education. Professional wisdom and research, as opposed to legislation and social pressure, seem to be the most effective stimulants for successful change in instruction.

3. If a teacher can follow an innovation without giving up his accustomed ways, the innovation is substantially more likely to succeed than if the case is otherwise. If a teacher must be retrained, the chances for success are much reduced.

4. The expectations of society at large with respect to school curriculum are apt to center on broad needs such as environmental education or safety; whereas specific curricular changes, such as the establishment of the elective system or extracurricular activities, are apt to originate within the field of education.

5. Curricular changes that represent the addition of subjects or the updating of the content of subjects are likely to be more permanent than changes in the organization and structure of the curriculum. Complete or considerable displacement of an existing curriculum pattern is not likely to be permanent even if the faculty initially supports the change.

6. Changes in the curriculum that represent additions, such as new subjects or changes in the substance of subjects, can be made more securely when accompanied by social support such as that which comes from legislation or organized interest groups.

7. Efforts to alter the total administrative structure, or any considerable part of it, or to make changes that entail such reorganization are likely to be unsuccessful.

8. A change initiated in a particular school, in the absence of a plan for diffusion, is not likely--no matter how loudly it may be acclaimed--to become widespread or even to be permanently entrenched in the school in which it originated.

9. Changes that require educational personnel to relinquish power or that cast doubt on their roles--as in the case of consolidating and redistricting schools--are likely to be resisted. Accompanying legislative, legal, and financial impetuses increase the probability of success in such changes.

10. The weight of the cognitive burden on personnel is one of the significant factors that helps determine the permanence of a change.

11. The source of a change appears to have far less to do with its staying power than the kind of support the change receives and the strain the change places upon school personnel.

12. The U.S. Office of Education is subject to the same conditions of success--as set forth above--that other change agents are subject to.

13. The data set forth in this report are too gross to provide insight into the sort of situational analysis that successful change entails. More refined data could be secured by intensive case studies. It is recommended that a few well-chosen case studies be made to explore the underlying variables whose manipulation and control can give a change agent greater assurance of success.

APPENDIX B. THE INDUCTION AND MANAGEMENT OF CHANGE*

The school is neither a closed nor an open, but rather a "quasi-closed," system, such that it can be influenced both from outside itself and from inside itself. Those influences that originate outside the system are usually rooted in some socioeconomic state of affairs.

In analyzing the reasons for any specific change in the schools, due consideration must be given to the state of affairs that has given rise to the need for change, the factors that have caused the state of affairs, and the system's tolerance for inaction.

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*Appendix A, A Glossary of Changes, is not abstracted.--Ed.

Attempts to induce change typically confront a status quo which may be conceptualized as a set of forces, the result of which is zero. Such an equilibrium of forces must be upset and a new equilibrium established if a change is to be made successfully. To analyze the forces involved in a specified equilibrium would require facts about a particular case, and these obviously cannot be available apart from an actual study of the case in hand. It is therefore necessary to be content here with mentioning a few of the forces typically involved in an equilibrium. Among these are vested interests, the inertia of habit, and the power of social conformity.

The question is, How can deviations be induced and sustained in the face of such forces? A number of answers have been given to this question. One is that a critical mass of deviation must be induced into the system all at once. In the absence of a formula for estimating such a mass in particular cases, it becomes a matter of judgment. Intuitive judgments are of course risky. But that is the state of the art.

There are two motives which commonly support attempts to make changes in the schools. The first of these is to increase the amount of learning or to change what is learned. The other is to alleviate defects in society at large. There can be little doubt that the first of these motives is well founded. However, the schools' influence on specific social difficulties may be much less than is supposed; and this point raises serious questions as to whether or not the energy spent on trying to modify the educational program is the most appropriate way to bring about specific changes in society. Nevertheless, it is clear that the general level of education in a nation is definitely associated with the vitality and strength of the nation, and with the general welfare of the people as well.

An abstract of "A Review of the Literature--Training and the Change Process," by Maurice Olivier

SUMMARY

Herein are discussed the definition of the change process, including types of change, change models, the phases of change, and semantical problems related to the discussion of change; the relationship of people to the change process; the relationship of training to the change process, including a view of training as inhibitive and a view of training as facilitative, an emerging definition of training, the emerging profession of organization development, the use of small groups in bringing about change, and the function of change agents; training strategies and tactics to bring about change, including meetings focused on diagnosis of existing situations, and meetings focused on altering an existing situation; some of the things required for change in education, including the need for workable behavioral concepts, for a reduction in role conflicts, for translation, for internalization, for an absence of overgeneralization; and some of the techniques available for bringing about change, including team teaching and temporary systems.

ERIC DESCRIPTORS

*Change Agents
*Educational Change
*Educational Innovation
*Literature Reviews
*Training
Behavioral Change
Teacher Education

THE TASK

In the changing of educational institutions, what is the role of training in the process of dissemination and diffusion? Consideration should be given to questions such as, What is the role of training vis-a-vis the change process? Who are the key people who need training? Who, when changed, will change others? Are those who are ready and committed to change the only ones effective at bringing it about? And, if so, how do people arrive at or get brought to such commitment?

DEFINING THE CHANGE PROCESS--AN EXERCISE IN GERRYMANDERING?

The gap between the social science scholar and the practitioner of educational administration is widening. While social scientists as a profession are not spending any sizable portion of their time learning how to change organizations, especially in the realm of interpersonal and group relations, the practitioners are actively so engaged. The temper of the times leaves them no other choice.

Types of Change

Change can be directed at three levels: the individual, the group, and the social system. Bennis (2-4) identifies eight types of change by focusing on the relationship between a change agent and a client system: planned change, indoctrination, coercive change, technocratic change, interactional change, socialization change, emulative change, and natural change. Guba (11,12), on the other hand, describes three types of change: evolutionary, homeostatic or reactive, and neomobilistic or planned. The change process may be viewed in many different ways, and much has recently been written about it, particularly with reference to education. However, it is interesting to note that there is little agreement concerning the basic question of whether schools should attempt or be the target of planned change efforts.

Change Models

The following statement by McClelland provides an insightful overview of existing change models:

> It is premature to do more than wish for a general model, let alone a general theory of change and changing. Accordingly, researchers have developed a variety of sub-system models, each of which deals with some aspect of the change process or with some specific setting. Quite understandably, they vary widely in comprehensiveness, complexity, and elegance. [21]

Bennis (2-4) identifies three general classes of change models: equilibrium models, organic models, and developmental models. Chin (7) describes four such classes: systems and component models, organic system models, developmental models, and intersystem models.

Phases of Change: Some Views

Rural sociologists, who have been responsible for most of the research and conceptualization of adoption phases, have more or less reached a consensus on a five-step process: awareness, interest, evaluation, trial, and adoption. Pioneer social psychologist, Kurt Lewin, on the other hand, describes three major stages in his early studies of group decision and social change: "unfreezing, moving, and freezing" (18). In recent years, educational research and theory have drawn from both the rural sociology and the social psychology traditions. Miles (22-24) is an example of the former; Lippitt, Watson, and Wessley (19), of the latter.

Problems with Translation

Immersed in the "name game," the practitioner is caught among various writers who use the same term to refer to different things and use different terms to refer to the same thing. Moreover, in delineating the various phases in the change process, many writers tend to focus on a segment of the change process without indicating which segment is being explicated and/or imply that all segments are being explicated when in point of fact they are not. There is a great need to develop closer working relations with practitioners and education scholars.

PEOPLE AND THE CHANGE PROCESS

This chapter describes various organizational and individual variables associated with the process of change.

Institutional Role

The process that was established for goal setting for higher education in Oklahoma typifies the great need for educational systems to take realistic looks at themselves. The process attempted to determine what kinds of post-high school opportunities the state of Oklahoma should provide; who should bear the cost; and what educational institutions should do to support individual development, solve social problems, and promote cultural development in the state of Oklahoma.

The Colorado Commission on Higher Education (8) attempted to assess needs for higher education in the state with regard to enrollment projections, distribution of population, availability of extension courses, and the number of students from economically and educationally disadvantaged backgrounds. Additionally, the commission examined size and planned growth of each state institution. It has looked into and discussed the purposes, organizations, and students of community colleges, state colleges, and the university system.

Although much of the student rebellion on campuses has been attributed to the impersonality of academic institutions, it is not a major reform in governance that will make the institutions more responsive to student needs. It is time for the university to withdraw as completely as possible from all nonacademic areas of student life and transfer responsibility to the students. If the university abandons some of its welfare role, it may be able to concentrate more on learning and teaching and, possibly, on extending educational opportunity more widely.

Among proposed alternative models to the present system of higher education are a) a university without walls, or city as a university; b) a university whose main objective is relevance; c) a university that provides education for leisure; d) a university that shelters part of the population; e) a university that produces people who can make things work; and f) a university that trains people for survival.

The private liberal arts colleges are in trouble. Many of them have failed to adapt to new pressures in the U.S. higher education system and have been unable to develop new concepts and purposes that have the support of faculty, students, and the public.

Organizational Change

Although we have dealt quite extensively in the previous chapter with the issue of organizational change, several reviews of the literature are worth noting in this section. Downey (9) reports on an assessment of the present status of a small high school in Alberta, Canada. Specific recommendations are that a multicampus high school system be established wherever one is geographically feasible and that ways and means of capitalizing on the strengths of smallness and overcoming its weaknesses be considered.

The consulting firm Booz, Allen and Hamilton (6) detail major recommendations to improve the public, elementary, and secondary school system in Wyoming. The firm recommends that "(1) state should articulate the objectives to serve as guidelines for public school educators; (2) the state department of education should be administered through a management by objectives approach; (3) the state superintendent of public instruction should be an appointee rather than an elected position; (4) programs and services of the state department of education should be modified to meet public school objectives and needs of Wyoming citizens more adequately; (5) the state department of education should be structurally reorganized; (6) utilization of professional staff should be maximized; (7) coordination among school districts could be improved; (8) within districts maintain a minimum amount of schools until the size by attendance would improve educational services of the districts; (9) personnel positions and salaries should match reponsibilities and compare with those in other states; (10) multi-state and intra-state educational agencies should cooperate; and (11) cooperation of educational organizations within Wyoming should be sought."

Organizational Structure

Palardy (26) presents a theoretical design to reduce hierarchical structures of school systems, thereby increasing leadership potential and the effectiveness of teachers. Evidence from another study seems to suggest that relationships exist between formally structured organizations and the perceived need satisfaction of classroom teachers. A similar study concludes that teachers' perceptions of organizational climate may be functions of the interplay between teachers' personalities and the structure of the organization in which they function.

Harkin (14) attempts to present a more appropriate role for the principal, one that denies his pedagogical superiority while emphasizing his importance in determining quality of behavior in the school.

Bernthal (5) examines several types of organizations (charismatic, traditional, bureaucratic, and task oriented) and the role of the leader in each. He says that the leader's "role consists of realistically assessing environmental forces or constraints, articulating the organizations mission, prying for and securing resources for the functions of the organizations, providing internal coordination, and communication, and conflict resolution, and representing the organization to its constituency. The role of the leader in a charismatic organization is neither authoritarian nor democratic, but is flexible and adoptive."

Organizational Climate

In a study of the relationship between human environment and innovativeness in school systems, Hilfiker (16) found that certain interpersonal relationship variables are important in initiating and maintaining innovations in educational organizations.

Helsel (15) hypothesized that teacher perceptions of organizational climate would be related to their expectations that successful change would occur in their schools. He speculates that teachers see themselves as having limited impact on change in schools.

Kenney (17) attempted to determine the forces outside schools in the urban area that appear to influence the climate in the school organization. Teachers (N=2,047) in the study perceived a negative image of their schools; "73% of the 102 schools studied had closed climate when climate scores were computed."

Mogulof (25) emphasizes selecting various organizational tactics to concentrate on restructuring the way in which a school system relates itself to the world around it. He argues that "it seems less important now to put limited energies and monies into . . . additive and enrichment devices. Schools should breach [their] own walls to bring parents in, to better protect and connect students, to bring industry in, to share authority and give authority to students."

School Administration and Management

Pressman (27) suggests that our present urban school systems cannot manage the problems of educating the poor and that "a new national complex of privately managed inner-city schools, divorced from the public educational establishment and independent of one another, is required."

Results of a study conducted by Yee (30) indicate that pupils' and principals' ratings of teachers lack significant relationship. However, teachers' and principals' attitudes toward children correlate positively. The study also determined that in the middle-class situation principals rate superior those teachers who express negative attitudes toward pupils.

Attitude toward change held by principals is not necessarily related to the amount of innovation in a school. According to Wiens (29), "principals who are influential in promoting or preventing change are different in several ways from non-influential principals. Influential principals tend to be: (1) older; (2) have more education; (3) have more than one principalship; (4) more aware of informal organizations in their schools."

A leadership study in which major hypotheses were not supported has provided some interesting food for thought for practicing school principals relative to their vital principal-staff relationships. Maintenance of psychologically distant relationships with their professional staff by principals correlated negatively with ongoing effectiveness measures, especially in Negro schools. The study is timely for current emphasis on the professionalization of the teaching role and the impact of this trend on principal-staff relationships.

The recent movement in educational accountability and its implications are the topic of conversation in most educational circles of today. Localized popular participation--give-and-take between public and educators--is still perhaps the most productive way to determine educational policy and administration.

Authority

Authority is seldom discussed by proponents of educational reform, except as something to be abolished. Benne (1) analyzes the concept of authority and reasons for its neglect by philosophers and its disrepute among educators.

Teacher power and student power movements have recently occupied the spotlight in educational circles as well as national and local newspapers. McAndrews (20) feels power in education will move to the state and federal levels and recognition of this fact by power groups will produce further steps toward unified action on all levels. The action itself will place greater emphasis on conflict resolution methods.

The possibility of a relationship between authoritarianism and morale of teachers and authoritarian levels of their administrators is considered in a study by Gubser (13). Significant relationships were reported.

Leadership

Sensing need for change has become one important function of educational leaders. Theorists and practitioners in educational administration have been devoting increased attention to reconceptualizing the role of administration in secondary schools. Assistant principals, for example, are not recognized for their ability and leadership potential.

Sergiovanni (28) explored the relationship between the need orientation of 227 teachers and their preferences for leadership style in principals. The findings indicate "that regardless of need orientation type, teachers preferred integrative leadership styles characterized by initiating structure and consideration."

TRAINING AND THE CHANGE PROCESS

We usually tend to regard in-service education (that part of an educator's professional growth that takes place after the beginning of a teaching career) as completely unrelated to both preservice training and the actual classroom environment within which a particular teacher is working. This is unfortunate. What is implied in the current academic literature on the subject is a complete restructuring of in-service training so that it can become an integral part of a preservice/in-service continuum which is directly related to the upgrading of a teacher's classroom performance.

The major reason that most teachers actually become involved in in-service training activities is the desire to accumulate the university credits necessary to move them up the pay ladder or up the promotion scale. Many school systems inadvertently encourage this attitude by requiring prospective teachers to accumulate a certain number of "units" of study regardless of whether or not the specific courses that the teacher takes are relevant to the individual needs of the teacher. We often condition teachers during their preservice training to accept the fact that much of their teacher preparation is unrelated to what actually happens in the classroom.

The typically inconvenient timing and location of existing in-service training programs very effectively reinforce most teachers' attitudes towards in-service training, by suggesting to these teachers the relatively low value placed on these activities by the school power structure. A still further defect in our present in-service training activities stems from the inadequacies of most in-service trainers. Typical in-service programs feature instructors with marginal abilities, who use inappropriate techniques to communicate irrelevant content.

Training Viewed as Inhibitive

Too often, school system training programs inculcate an attitude of caution and maintenance of the status quo. Moreover, once a teacher arrives at a specific school, he is often enough quickly, if informally, tested by his new colleagues to determine the extent to which his attitudes, values, and goals are congruent with theirs.

Training Viewed as Facilitative

On the other hand, training within a school district can often be one of the factors that most strongly supports change.

An Emerging Definition of Training

Most of the approaches to the change process recommended in the literature necessitate the performance of new skills in areas such as comprehensive planning, program management, program development and selection, evaluation, needs assessment, large-scale consultation, community interface, decentralization, knowledge utilization, problem solving, diffusion, change agentry, educational engineering, conflict resolution, intervention, and leader behavior from the superintendent to the teacher to the pupil. These approaches call for retraining on a massive scale.

In order to conceptualize better the type and kind of training that would be required to suit adequately the needs of educational organizations, Fordyce and Weil (10) provide a definition of training viewed in two ways: a) training in specific skills and b) training in interpersonal and group membership skills. With the exception of a few cases reported in the literature, school systems undertake training almost entirely in the realm of specific skills alone. For many organizations undergoing major realignments, this one-sided emphasis is a big mistake: it is imperative that their people understand and be prepared to deal with interpersonal and group interactions.

The Emerging Profession of Organizational Development (OD)

Organizational development (OD) is a profession that has developed over the past 10 years which deals with diagnosing and improving an organization's ability to function.

OD in schools usually begins when administrators or staff members invite the interest of an OD consultant. After collecting preliminary data, the OD consultant will work with the system's managers who will develop their own diagnosis of needs and prescriptions for change. At each stage of planning and action, OD relies on strong participation of all system members. Moreover, OD has another function that goes beyond facilitating improvement, and that is to help an organization attain a condition of self-renewal.

Small Groups

One of the main strategies employed by organizational development practitioners to communicate certain kinds of innovative processes is to work within the context of small groups. When a potential user has reached the point of considering the relative merits of his own adoption of a change, when he needs to understand it thoroughly, when he needs answers to his specific questions about it, and when he needs supportive feedback on his newly adopted behavior, small-group interaction can be highly effective.

The Third Party or Change Agent

The role of a third party in organizational development is analogous to that of arbitrators, judges, umpires, referees, and mediators, with two important differences. The first major difference is that the third party is often introduced to a scene which does not have a recognized set of rules to be invoked or yet have a recognized dispute. The second major difference is that it is the role of the third party to guide the parties toward more self-sufficient behavior, rather than to make them dependent on him for decisions.

At present, training programs for OD practitioners are limited. With the exception of the postdoctoral program conducted by the National Training Laboratory Institute for Applied Behavioral Sciences (formerly, the National Training Laboratories of the National Education Association), the OD practitioner's main source of training is other OD practitioners. The development of other programs to train OD personnel and the recognition of these personnel by the consuming public are handicapped by the absence of any general ethic or accepted standards.

INSTRUMENTALITIES OF CHANGE: TRAINING STRATEGIES AND TACTICS TO BRING ABOUT CHANGE

This chapter attempts to synthesize a set of pragmatic strategies and tactics which may serve as useful change instrumentalities in the process of changing behaviors in organizations. Most of the literature herein reported advocates that the most effective way of bringing about change within organizations is through joint participation of all interested parties. What is hardly ever mentioned, however, is that nearly everything that is attempted in the process of change occurs in the setting of the meeting. *Meetings are one of the principle ways in which change occurs.* Thus, within the contextual framework of meetings, this chapter attempts to synthesize various training strategies and tactics which have recently been claimed sufficiently standardized and predictable to be considered part of an emerging technology for human systems known generally as organizational development.

Meetings Focused on Diagnosis of the Existing Situation

The managers' diagnostic-team-meeting series. The purpose of diagnostic team meetings is to make a periodic assessment of the effectiveness of an organization and to entertain the need for and possibility of change. Within the educational setting, the team could consist of the principal or assistant principal, a third party from outside the organization, and a staff assistant such as a business manager. Moreover, a team may be enlarged to include representatives of various levels of the organization, e.g., teachers.

This kind of meeting can be helpful to a principal in examining the health of his organization. It improves the chances of timely change by bringing together experts in diagnosis and persons intimately acquainted with the organization. The role of the diagnostic team is limited, however, to stimulating an organization to consider change, as opposed to actually making changes.

The confrontation goal-setting meeting. A large number of persons, usually 40 to 100--in this case, the principal and the staff--meet for a day to set goals for change. In subgroups, suggestions for change are made that are then considered by the group at large. The principal makes preliminary decisions on certain key issues on the spot. The advantages of this type of meeting are that it is speedy, it gives staff an optimistic sense of participation in the change process, and it can bring about major changes. Its limitations are that it will not work well at all if there are serious unresolved differences among top management in attendance, if staff does not trust top management, or if management is not truly committed to the objectives or mode of the meeting. A follow-up meeting is needed 4-6 weeks later.

The family-group diagnostic meeting. The principal meets with a specific group within the staff (e.g., reading teachers) to conduct a general critique of their performance. Information is collected concerning how personnel feel about topics (e.g., what they do best, what they do worst, what they would like to see changed). This is a preliminary kind of meeting that can awaken an adventurous interest in the possibilities of change.

The organization mirror. In this type of meeting a school administration will meet with an outside group with which it commonly comes in contact, e.g., parents or a school board. The meeting closes with a list of specific tasks for improvement of operations, product, or services. The benefits of such a meeting include the provision of simultaneous feedback from a number of sources in a systematic way and, often, the conversion of critics to helpers. Limitations include the requirement of a skilled third party and the risk of a negative outcome from what is a complex and demanding procedure.

Meetings Focused on Altering an Existing Situation

Force field analysis. This is a tool for analyzing the possibilities of change in a situation that assumes that at any given moment the situation is in a state of equilibrium. All the "forces," either driving or restraining, that act on a situation are conceptualized as arrows going in one direction or another. By studying these arrows, it is supposed that problems become more comprehensible and manageable. However, it is important to note that successful results depend on the quality and completeness of the analysis of forces.

Sensitivity training laboratories. The National Training Laboratories of the NEA have developed a number of laboratory programs that stress the development of greater openness and interpersonal competence as the prerequisites of both effective problem solving and meaningful innovation by individuals and systems. At the heart of most laboratory training programs is the T-group or sensitivity training group. T-groups can be conducted in many different ways, although some common elements have been identified. They are usually unconstructed with regard to agenda, goals, speakers, and even length, in order to facilitate learning. Willingness to indulge in self-inquiry and experimentation is encouraged by relative freedom to do and say what one wants. The leader or trainer of a T-group behaves passively, taking a permissive nonauthoritarian and sometimes almost completely nonparticipating role.

Some recent and exhaustive reviews of the literature on this topic leave room for considerable doubt about the feasibility of transferring training back into the organizational setting.

The grid program. The objective of this program is to train leaders who have a high concern for people as well as a high concern for task assignments. There are six phases to the program: a behavioral laboratory, where general problems are discussed; team teaching, in which members of organization subunits work together; the creation of linkage among an organization's subgroups; establishment of new goals for the organization and its subgroups; implementation of planned change toward new goals; and stabilization and review.

Survey feedback. This procedure includes a systematic collection of data from the membership of the organization on a wide range of issues including supervisor perceptions, work motivations, etc. These data are summarized and fed back to administrators and their subordinates as a means of confronting serious human and managerial problems.

Role playing. Role playing is a technique for gaining an understanding of ourselves as others see us and of others as they see themselves. The crucial variable which makes the role-playing experience such an effective impetus to change seems to be that the participant improvises his own arguments in support of the assigned conclusion. The mechanism of improvisation necessitates involvement and apparently transforms outer conformity into inner conformity.

SUMMARY

Education has recently entered into a period of massive and irreversible change. Without really understanding how to carry it, and often without realizing why they are doing it, educational leaders across the country have taken on the mantle of innovation.

The Need for Workable Behavioral Concepts

School administrators as a group have too often overemphasized organizational structure at the expense of proper utilization of people. Teachers are generally powerless to innovate; they are generally involved in programs of change only after administrators have set goals and made critical decisions; and they (rightly) often feel that their involvement is mere "window dressing." And so a vicious cycle exists, in which administrators deplore apathy and high staff turnover and yet shore up the traditional concepts of supervision and hold tight to the reins of organizational power. Concepts stemming from recent research in organizational behavior can offer guidelines to solutions.

Role conflicts

The literature on management and organization makes many allusions to the traditional antagonisms between researchers and practitioners. Practitioners demand that researchers formulate something "useful" and something without jargon, and the researcher is apt to feel that the administrator is looking for gimmicks. Cooperation is needed.

The Need for Translation

There is a genuine need for more digestible, nontechnical research reporting to the administrator. Yet it is difficult to communicate adequately much that is really new or complex in the compressed form that many administrators desire.

The Need to Internalize

Another problem to be combated is that we frequently do not internalize what we know--we have not made it a part of the way we live. This is particularly true in matters dealing with behavior.

The Need Not to Generalize

Overgeneralizing is at least partly the result of the administrator's constant search for solutions, for something "useful." Overgeneralizing by applying the same prescriptions to all schools ignores the unique factors in each school situation.

These, then, are some of the major problems which administrators must be aware of when they put research-based concepts of organizational behavior to work in their schools. But how can we make use of what is being discovered and made available?

Team Training

In virtually every school, some faculty members have gone on sabbaticals for specialized training at one time or another. But it often happens that on the return of these faculty members, they are unable to get many new ideas introduced: it's still the same old social system with the same old problems. A strategy for creating far greater impact is to expose an organizational team to simultaneous training.

Temporary Systems

A factor that is partly responsible for the slowness of organizations to change is the inadequacy of energy or resources to devote to the change process. Temporary systems can supply these resources or this energy. Conferences, games, task forces, and research projects are some of the many kinds of temporary systems for which there is frequent use. Most of the training strategies and tactics described in chapter 4 would come under the heading of "temporary systems."

Training and the Change Process

Perhaps the main observation is that in its present state and form, the literature contains little that is readily and dependably usable by the practicing school administrator in the task of administrating for change. Most of the approaches recommended in the literature necessitate the performance of new skills in areas such as comprehensive planning, project management, program development and evaluation, needs assessment, large-scale consultation, community interface, decentralization, knowledge utilization, problem solving, diffusion, change agentry, educational engineering, conflict resolution, simulation, synectrics, leader behavior, etc. from the superintendant to the teacher to the pupil. These approaches call for retraining on a massive scale. However, few formal training programs for these skills exist. Currently such training programs that do exist are largely on an ad hoc basis. But if training remains on this basis, potential for improvement will remain just that, namely, potential. It may be premature to construct a curriculum for these skills because few of these skills have been operationally defined, but it is not premature to consider the nature and source of the training.

Several authors are somewhat pessimistic that universities, in conjunction with practitioners, will establish and provide such programs. As seen from my staircase in the "ivory tower," some universities are already preparing themselves. For others, it is hard to say. Perhaps the most promising venture in the development of training designs is the notion of training laboratories suggested by the recently assembled Task Force '72 group out of the U.S. Office of Education, Bureau of Educational Personnel Development.

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An abstract of "What Variables Appear
Important in Changing Traditional In-Service
Training Procedures?" by Francis Thomas Sobol

SUMMARY

Herein are discussed descriptive findings from the educational literature on the question of what variables appear important in changing traditional in-service training procedures, the question of the content versus the process of in-service training, important problems in in-service training programs, and implications of the important problems; educational research bearing on changes in in-service training programs; and research findings bearing on organizational innovation in education and business are also discussed.

ERIC DESCRIPTORS

*Educational Change
*Educational Innovation
*Educational Research
*Inservice Teacher Education
*Organizational Change
Literature Reviews

THE TASK

What variables appear important in changing traditional in-service training procedures?

INTRODUCTION

The net result of this search is a proposal that the topic be defined more specifically and that systematic research be conducted to document with valid and reliable data the variables which do influence changes in in-service programs. Such documentation does not now exist. Ideas, proposals, needs, and suggested changes exist, but they all lack supporting data. In order to review the educational literature on this topic, I have rephrased the question: Given traditional in-service teacher training programs composed mainly of information-gathering activities, how do school systems move to an in-service training program which adds information utilization, practice, and feedback to these traditional activities?

The following review will share with the reader the answers educators have given to this question. These answers take the form of descriptions or prescriptions of the problems and suggested solutions. There is little supporting data for these prescriptions.

DESCRIPTIVE FINDINGS FROM EDUCATIONAL LITERATURE

Content versus Process of In-Service Training

There is practically no research on the "how" or the "why" of changing in-service teacher training programs. Rather, all the research reports that do exist deal with the "what" of newer approaches to in-service teacher training; e.g., in-service training based on interaction analysis, microteaching, technical skills of teaching, simulation and games, team teaching, individualized study, programmed instruction, and flexible scheduling.

Important Problems in In-Service Training Programs

What we have at this point in time is a great deal of description and prescription of what should be. I have found at least 11 "important" problems in current in-service teacher training programs.

1. Teachers should be involved in planning stages of in-service programs;

2. Extra time should be provided for in-service programs rather than making teachers use weekends or night courses;

3. Teachers should be helped to understand how they actually interact with students in the classroom;

4. There is a necessity for making teachers aware of their own need for continual education in order to maximize their performance;

5. There is a necessity for administrators to encourage and reward teachers for participating in in-service training programs;

6. There is a necessity to encourage professionalism and confidence in teacher training programs;

7. There should be a continuum of training, starting with college courses and moving out into the local schools, rather than limiting training to preservice courses;

8. Schools should take more responsibility for in-service training by using master teachers, both to help encourage teacher growth and to help train those teachers who want to grow;

9. Teacher pay increases should evolve from classroom performance rather than the number of in-service credits--this would encourage performance-based in-service courses as opposed to information-gathering courses;

10. There should be more flexibility in in-service programs to allow individuals with certain needs to get training for their needs rather than force them into mere group information sessions; and

11. In-service programs must be made more relevant to actual in-class problems of teachers.

Implications of the Eleven "Important" Problems

Overlooking (for the moment) the lack of data to support or define these problems, we can see that there are several questions which suggest variables that could influence a change from a traditional in-service program to a more innovative program.

1. Are the schools and their teachers aware of newer teaching patterns or curriculum packages which require different in-service programs?

2. How clearly do the schools and their teachers understand the learning needs of their students? Such understanding may require new training programs for teachers to meet these needs;

3. How clearly do the schools and their teachers see the need for new teaching patterns which require in-service programs?

4. Does the school create an environment that supports the teachers' work in undertaking a demanding performance-based in-service program?

5. Does the school provide the resources necessary for adequately implementing a new in-service training program? and

6. Does the school provide the resources necessary for adequately implementing the curriculum required by the new in-service training?

EDUCATIONAL RESEARCH BEARING ON CHANGES IN IN-SERVICE TRAINING PROGRAMS

At least four dissertations have used questionnaire research to find out what teachers thought in-service training programs should include. These dissertations show that school teachers agree with the educational theorists about the components or elements which constitute an effective in-service training program. The problem is that these are just suggestions about what should be. At best we can conclude that teachers, administrators, and educational consultants should be involved. We need to turn our attention from these descriptions to the research findings derived from studies of organizational innovation in educational and business settings, in order to evaluate the possible effectiveness of these variables in changing in-service programs.

RESEARCH FINDINGS BEARING ON ORGANIZATIONAL INNOVATION IN EDUCATION AND BUSINESS

Educational Data on Organizational Innovation

The possibility of implementing a new in-service program may stand or fall on the teachers' understanding of the program and their understanding of the program's possibilities for bringing instructional change into the school. That poses the whole question of changes in existing in-service programs within the larger context of organizational innovation. Gross, Giacquinta, and Bernstein (1) demonstrate several additional variables which can nurture or kill an innovative in-service program. They identify four barriers to an organizational innovation dependent on a new in-service training program. Their proposed instructional innovations failed because

1. Teachers lacked a clear understanding about the new role they were to play in the instructional process--they did not have a clear idea of the performance expected of them;

2. Teachers lacked the necessary skills and knowledge to carry out the new instructional package;

3. Teachers lacked the required materials and equipment to implement the new programs; and

4. The organizational arrangement of the school in the form of school schedules, assignment of teachers, etc. was incompatible with the innovative program.

These findings suggest that a school must not only answer yes to the six implementation questions posed earlier in this report but that it must also organize to provide the resources for implementing an instructional innovation. If this is not done, there may be no motivating reason for teacher involvement in a changing in-service training program.

Noneducational Data on Organizational Innovation

Creating a need for new programs. Unfortunately, the descriptive suggestions presented so far run into trouble when we consider the research data gathered by psychologists and sociologists as they study organizational innovation. From studies of organizational and managerial changes in business, Gross, Giacquinta and Bernstein suggest that a sense of need for organizational innovations may be associated with a) pressure on the organization from outside forces, b) internal tensions or needs within the organization itself, c) a previous atmosphere of change within the organization, and d) the use of an outside expert who has a positive image with the organizational members.

These studies hint at three or four global variables which might influence changes in in-service training programs. But what is needed is some systematic study of the variables as they apply directly to schools trying to develop, implement, and evaluate changes in their in-service teacher training programs.

The Initiation of Organizational Innovations. Innovations in organizations seem to depend on a) the use of change agents--persons who explain the what, the how, and the why of proposed innovations; b) the participation of organization members and the change agent in discussions and decision making concerning the innovations; and c) the development of some kind of strategy by organization members and the change agent for implementation of the innovation.

There is an impressive list of studies on these initiation variables, but the data from them do not substantially define or verify them.

Implementation of Organizational Innovations. In general, the studies or reports which discuss the implementation of innovation suffer from many flaws. Given these flaws, we can only outline the possible variables which might be researched in a systematic study of in-service innovations. Those most often studied are a) external and internal support for change; b) the adequacy of funding; c) the adequacy of plans for meeting both the organization members' needs and the organizational problem under consideration; d) membership acceptance of the need for change; e) old members of the organization remaining for new tasks; f) the presence of a change agent to give needed support and advice. These might be variables built into a controlled, systematic study of in-service innovation. As of now, they are merely suggestive of potential variables.

SUMMARY, CONCLUSION, AND REVIEW

This chapter contains an extremely detailed restatement of the questions, problems, issues, and data of the previous four chapters. It is three-fourths as long as the 18 pages that comprise the main body of the report.

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An abstract of "Of the Variables Causing an Institution to Have an Outstanding Teacher Education Program, How Much Import Can Be Attributed to the Fact That the Institution Recruits and Selects 'Outstanding' Students?" by Mari-Luci Ulibarri

SUMMARY

Herein are discussed the concept of an outstanding teacher education program, including curricula, faculty, students, resources and facilities, evaluation, program review, planning, and some outstanding programs; the concept of an outstanding student; the student in the program; the role of recruitment and selection; the historical development of recruitment and selection; what the literature suggests regarding the relationship of the outstanding student to the outstanding teacher training program; and some projections from what the literature suggests.

ERIC DESCRIPTORS

*Recruitment
*Selection
*Student Application
*Teacher Education
*Teacher Education Curriculum
Literature Reviews
Student Evaluation

THE TASK

Of the variables causing an institution to have an outstanding teacher education program, how much import can be attributed to the fact that the institution recruits and selects "outstanding" students?

INTRODUCTION

Although the problem as stated appears to be concise and simple, it actually encompasses many areas of teacher education. There are many unanswered questions. For example: What is an outstanding teacher education program? What methods of recruiting and selecting are used? What is an excellent student? How does the student affect the institution?

In the past, teacher education programs were by and large simply meeting the demand; and generally speaking, nearly everyone who applied was admitted. In the 1970s, it seems that supply has caught up with demand in the teacher market. Now is the time to make recruitment and selection techniques work to attract only the highest caliber human being.

THE PROGRAM

The concept of what an outstanding teacher education program is must be established. Few professionals agree on this subject.

Within the past 10 years, the American Association of Colleges for Teacher Education (AACTE) has been ardent in its quest to promote better teacher education programs. In a recent study in which it reviewed the standards that it felt worthy of recommendation to institutions of teacher education, the association covered the areas of curriculum, faculty, students, resources, facilities, evaluation, program review, and planning.

Curricula

The Evaluative Criteria Study Committee of the association recommended that teacher education curricula be based on objectives which reflect the institution's concept of the teacher's role. Curriculum should include general studies, content for the speciality in teaching, behavioral and humanistic studies, teaching and learning experience combined with laboratory, and clinical experience and practicum.

Faculty

The committee felt that the quality of a teacher education program depends primarily on the faculty. The committee believed that an institution engaged in preparing teachers must employ full-time faculty members, each of whom has obtained a post-master's degree and/or has demonstrated scholarly competence and each of whom has developed an appropriate specialization. The faculty in such an institution must keep in frequent contact with its related community school environment, so that its teaching and research stay current and relevant.

Students

The committee indicated that the institution should apply specific criteria for admission into teacher education programs. The criteria should be both subjective and objective, since no single criterion can predict success or failure adequately. Scores on standardized tests are still felt to be helpful in predicting the probability of success of an individual. The committee failed to mention the use of recruitment of students.

Resources and Facilities

The institution must provide an environment which aids the education program that is offered. A materials and instructional media center for teacher education maintained either as part of the school's library or as one or more separate units seems to be an especially worthwhile facility.

Evaluation, Program Review, and Planning

Maintenance of desirable teacher education programs demands continuous evaluation of the institution's graduates and of existing programs, as well as long-range planning.

Outstanding Programs

For the year 1968, the winners of the AACTE Distinguished Achievement Awards were the University of Maryland, the University of New Mexico, Western Michigan University, San Francisco State College, and Saint Olaf College. However, it does not appear in the citations that any emphasis in any of these programs went either to recruitment or to selection of students.

Summary

There are many aspects involved in the development and implementation of an outstanding teacher education program. Very little work has been done in the area of defining such a program. Of the many teacher associations, AACTE is the one which has made the greatest contribution to this field. The association places more emphasis on the recruitment and selection of students than did many pre-World War II institutions. However, the association has not made clear the exact role which recruitment and selection should play.

THE STUDENT

It seems likely that one would want to define the concept of the "outstanding student" in terms of his potential to become an outstanding teacher. However, very little is actually known about the relationship between teacher personality and teacher effectiveness. What is needed is the discovery of specific, unique characteristics of the effective teacher personality rather than research which leads only to the repetition of the self-evident--that the teacher must be able to relate to children, have a certain type of formal education, etc.

It is now believed that people choose teaching as a profession out of emotional needs rather than out of purely intellectual interest. It is therefore felt that institutions should inquire into the motivations of their prospective candidates. One of the early studies in the field of teacher personality, "Occupational Choice and the Teaching Career," discovered by use of the Edwards Preference Schedule that working teachers are characterized by high levels of deference, order, and endurance, as well as low levels of heterosexuality, dominance, and exhibition. These results probably represent accurately an occupational pattern found in teachers who today have 10 or more years of experience. Studies such as this one do not, however, aid in discovering what type of personality creates an outstanding teacher. What characteristics should be sought in selecting candidates is a question left unanswered.

Conclusion

The profession as a whole has not agreed upon a definition of an outstanding student. Judging from the criteria of selection procedures used by the universities, the student accepted as outstanding is usually distinguished from others primarily by grades. An individual maintaining a certain grade point average is often chosen before an individual who, if given the opportunity, could perhaps become a better, more efficient teacher.

Recent research has indicated that the teacher has a unique personality. Researchers have begun to concentrate on discovering characteristics of the teacher personality, but as of now little has been discovered. Studies are now being aimed at formulating means of distinguishing the potentially excellent teachers from those of average or below average ability. If this can be done, methods of recruiting and selecting will be greatly improved. As will be shown later, institutions have until now been severely limited insofar as active recruitment and screening are concerned.

THE STUDENT IN THE PROGRAM

Since there has been no evidence that supports the theory that students play an important part in teacher education programs, there is no reason to believe that the outstanding student should have any effect either. If one is to believe the literature, it would appear that the student is the victim of the university corporate system.

RECRUITMENT AND SELECTION

The effect that recruitment of outstanding students has upon the establishment of an outstanding teacher education program seems to be very limited. It appears, moreover, that very few institutions--if any--actively recruit for their programs.

The concepts influencing recruitment and selection will here be discussed.

Recruitment

Recruitment, according to a 1950 study reported by Byers, is defined as "the dispensing of accurate information concerning the significance of careers in education and the satisfactions teachers find in their work" [3:295].

Today, although there is still emphasis on the nonmaterial receiving and giving that occurs in the teaching profession, recruitment appears to give strong emphasis also to the psychology of the teacher. There is a realization, as has been indicated previously, that people are drawn into teaching to satisfy personal needs.

Recruitment of outstanding students is a topic which the literature does not identify. The literature indicates that recruitment is heavily dependent on teacher supply and demand. Only when they have reached or surpassed their quotas can institutions become selective in their choice of teacher education candidates.

The fear that the profession may be passing by outstanding candidates has always been in the literature. However, it seems that, if educators and teacher education institutions were sufficiently interested in improving the quality of students at their college, they would find means by which to better the chances of bringing in the outstanding student, such as by making more scholarships available and, of course, by actively promoting the institution. If this has been done on any large scale, it has not been recorded in the literature.

Selection

Selection plays a much more extensive role in teacher education institutions than does recruitment. In recent years, as the pressure for increasing numbers of teachers has declined, institutions have been able to show greater selective discrimination in the quality of teacher they put into the field.

However, according to Troger and Pace, "Laws make the selective admission of students difficult in some states, while in other states selective admission is mandatory" (5:18). Perhaps this is one of the reasons why there is such a dearth of literature concerned with how "outstanding" institutions recruit "outstanding" students. Each institution would have to study in depth its own programs because there are fundamental differences among the various programs across the nation.

Recruitment and Selection Procedures

There is a wide variety of actual recruitment and selection procedures. It seems as though most teacher colleges have bettered themselves primarily by requiring high standards of their candidates.

Methods used to recruit competent students are given in the following table compiled in 1963 by AACTE (1:52).

TABLE 1. MEANS USED TO ENCOURAGE COMPETENT STUDENTS TO GO INTO TEACHING

Means of Encouragement	Total Number	Colleges Percent
Student National Educational Association (SNEA)-	36	29.7%
Major professors in personal conferences--------	20	16.5
Guidance---------------------------------------	19	15.7
Orientation of freshman class------------------	15	12.3
Brochures--------------------------------------	14	11.5
Talks with student groups on career days--------	11	9.0
Members of department of education-------------	10	8.2
Endorsement and cooperation of other departments of college----------------------------------	9	7.4
Talks to freshman class------------------------	9	7.4
Student Education Association arouses interest--	8	6.6
Faculty advisors-------------------------------	8	6.6
Announcements on bulletin boards and at assembly	7	5.7
Provides favorable climate of opinion----------	6	5.0
Introductory course in "Philosophy and History of Ed."------------------------------------	6	5.0
Nothing was listed-----------------------------	6	5.0
Working through high schools-------------------	5	4.0
Offer placement service------------------------	4	3.5
Scholarships-----------------------------------	4	3.5
High school future teachers' organizations------	4	3.5
Sponsorship of student teachers associations----	3	2.5
Seminars---------------------------------------	3	2.5
No need for recruitment (most want to teach)----	3	2.5
Former students now teaching-------------------	3	2.5
Faculty-student outside classroom--------------	3	2.5
Improved teacher education program-------------	2	1.5
Stress responsibility to teach children---------	2	1.5
Tradition--------------------------------------	2	1.5
Teacher education battery of tests-------------	2	1.5
Talks to sophomores----------------------------	2	1.5
Teacher-career month observed------------------	2	1.5
Upperclassmen in teacher education meet with freshman and answer questions----------------	2	1.5
Orientation course (no credit)-----------------	2	1.5
Student newspaper------------------------------	2	1.5
Higher standards for admission to teacher education-------------------------------------	2	1.5
Personnel dean---------------------------------	2	1.5
Features in catalog----------------------------	2	1.5

HISTORICAL DEVELOPMENT OF RECRUITMENT AND SELECTION

A review of the literature from 1917 through the 1950s suggests that the procedures through which institutions recruit and select have changed very little in the first half of this century.

Recent Literature

In the spring of 1966, Robert Ebel listed five items which comprise essentially what the research literature has had to say about measurement applications in teacher education.

1. Students must demonstrate academic ability in order to be admitted to some, but by no means all, programs for teacher education.
2. Few of the programs that are selective are highly selective. Many students of very ordinary ability are admitted.
3. Human, interpersonal relations are obviously important in teaching but attempts to use personality tests as basis for selecting prospective teachers have not been successful. Refinements in rating actual behavior in teaching appear to offer more promise.
4. Tests are used to evaluate achievement in courses and to assist in academic advisement and personal counseling; but little, if any, special research on these applications has been published.
5. Limited use is made of measurements to determine competence to teach. Efforts are being made to expand this use, but there is strong opposition from those who mistrust tests. [4:24]

Summary

The means by which institutions practice recruitment and selection have changed little. Most institutions have continued to use the printed page as their primary means of recruitment. Selection of students continues to be a question of academic competency.

With the increased awareness of the teacher personality, professionals have begun to question the value of the procedures formerly used. Unfortunately, concrete suggestions for the improvement of these procedures have been few in number and have often been only restatements of the original procedures. The profession has been hindered by too many unanswered questions and by research which has added almost nothing to existing knowledge.

CONCLUSION

Literature Findings

It appears that the literature search has revealed little that unites the "outstanding" student with the "outstanding" teacher training institution. The outstanding student has been portrayed as an element which is important but almost incapable of being isolated. This has been due, in part, to the shortage of teachers and to weak procedures which the institutions have traditionally used in the recruitment process.

The profession has had to overcome the low position which teachers have been given in society. They have had to overcome the general feeling that "those who can't, teach."

Their struggle for respectability has been hindered by a shortage of teachers that followed the population explosion after World War II. Even though the professionals have become increasingly aware of the ineffectiveness of existing recruitment and selection procedures, they have felt a need to meet the demand for teachers.

There has been no statement which yields any information as to whether, especially during the postwar population explosion, institutions have maintained their selective standards or have sought only to meet the supply and demand situation. It can be inferred, however, that few institutions during the immediate postwar period were able to be highly selective.

The Outstanding Student

The literature does not do an adequate job of describing the outstanding student in measurable terms. It spends rather more time describing the excellent teacher; but again, seldom in measurable terms. From the literature, it can be concluded that the excellent teacher was an excellent student. The apparent weakness in all the studies is that few "excellent" attributes can be measured scientifically.

It should be noted that the profession has been aware of the existence of a unique teacher personality since at least the beginning of the century. Unfortunately, much of the information known about the teacher personality has been extremely superficial.

Until the present, most institutions have judged the quality of students by their academic performance. There has not, however, been any research which establishes a relationship between grades and teacher competency.

In recent years, some of the traits involved in the teacher personality have been recognized, and research has been conducted in hopes of finding an adequate instrument to measure teacher effectiveness. But such an instrument has not been discovered, and until it is, the outstanding student cannot be accurately identified.

The Outstanding Institution

AACTE has singled out certain institutions for awards during recent years. However, as with "outstanding student," the definition of "outstanding institution" is elusive.

Recruitment and Selection

Recruitment and selection procedures have been extremely superficial. Selection has been of relatively greater importance than recruitment; however, the effects of selectivity have been curtailed due to teacher shortages.

Many of the methods used for recruitment and selection are by all indications useless. These procedures seem more to fulfill the function of giving "the selectors and selectees the feeling of using a fair system of rules than of really augmenting the predicted [sic] powers of the selectors over the chance levels" (2:339).

Projections

It would appear that this search was conducted prematurely. Up to the present, there has been a demand for teachers in excess of supply. However, the supply and demand have finally been equated, and, in the summer of 1971, beginning teachers had difficulty locating positions.

Perhaps now selection and recruitment will become legitimate, meaningful functions. Perhaps now only the outstanding student will be solicited. But the work must begin by defining elements with measurable terms. A new era is upon teacher education institutions.

The literature does not support the theory that recruitment and selection significantly have contributed to the development and maintenance of outstanding teacher education.

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An abstract of "Incentive
Systems for Educational Personnel,"
by Richard Guttenberg

SUMMARY

Herein are discussed the question of what is an incentive; the use of incentives in industry: the current patterns of reward and punishment in the schools; the policy implications of the patterns of reward and punishment currently found in the schools; from a historical view, the incentive systems that the schools have tried out in the past, including scientific management and merit pay; and new incentive systems, including differentiated staffing and performance contracting.

ERIC DESCRIPTORS

*Educational Improvement
*Incentive Systems
*Teacher Attitudes
*Teacher Motivation
*Teaching Quality
Differentiated Staffs
Merit Pay
Performance Contracts

THE TASK

What is the current reward system which exists for educational personnel in elementary and secondary school systems? What efforts are being made toward changing this reward system?

WHAT IS AN INCENTIVE?

An incentive is anything which incites a being to action or effort. Implicit in every true incentive is a specific action or specific actions which the being is incited to perform; it is important not to lose track of this fact. Incentives can be either rewards or punishments, but authors of incentive schemes in the field of education--as in the field of industry--usually emphasize the rewards.

INCENTIVES IN INDUSTRY

Among the many incentives commonly available to an industrial firm to spur its workers to high productivity are promotion to supervisory positions; transfers to or from preferable work shifts, work units, or lunch hours; allocation of overtime; and assurance or lack thereof of job security.

At least once in the past, the field of education borrowed ideas wholesale from industry. Raymond Callahan (1) has argued that the "scientific management" movement which came from industry to education in the period 1909-1930 was severely damaging to education. Educators who followed the precepts of scientific management began measuring all educational values in terms of dollars and cents, e.g., it's better to teach French than Greek if French costs substantially less per lesson to teach. Once again, educators are considering the possibility of borrowing industrial techniques. Presumably they will be more careful and discerning than last time.

WHAT ARE THE CURRENT PATTERNS OF REWARD AND PUNISHMENT IN THE SCHOOLS? FOR WHAT KINDS OF ACTIONS DO THEY PROVIDE INCENTIVES?

The single-salary schedule must dominate any discussion of current incentives for school teachers. Its presence is almost universal. In a single-salary schedule, all teachers in a school district, regardless of productivity or teaching assignments, are paid a base salary derived from a fixed formula determined by accumulated experience and accumulated college credits.

There are several reasons for teachers to be pleased with the single-salary schedule. Fears of favoritism and betrayal have been removed; salaries have gone up, perhaps especially where unions--whose prosperity tends to be enhanced by the way that the single-salary schedule treats all teachers alike--have come to flourish.

What kinds of incentives does the single-salary schedule offer? There are two, basically: a) to stay in teaching, although this incentive is only slight, because the salaries in many other fields grow higher year by year than do the salaries in teaching and b) to take graduate courses. In addition, many people, especially teachers, like to think the single salary schedule attracts to the profession those who are intellectually and temperamentally well-suited for teaching.

Among the other rewards and punishments that might serve as incentives for teachers are a) fringe benefits, b) the chance of earning official commendation, c) the chance of suffering official criticism, d) the chance of being promoted to administrative levels.

A SUMMARY OF THE POLICY IMPLICATIONS OF THE PATTERNS OF REWARD AND PUNISHMENT CURRENTLY FOUND IN SCHOOLS

Once they are embarked on their careers, teachers as a rule do not receive strong, direct incentives to excel and achieve high productivity.

The high minima/low maxima single-salary schedules commonly in use in the schools may attract a fair range of talents into the profession in the first place, but the most ambitious of these talents (especially men with families) may soon find the schedules stultifying and leave the profession. This phenomenon may in recent years have been accentuated, as maximum salaries have not risen commensurately with minimum salaries.

Noncompetitive people are attracted to teaching. This is a very old dictum, but there is little in the current patterns of reward and punishment which would tend to alter it. Whether this noncompetitiveness matters at all is a question that can only be answered by reference to specific educational goals and objectives. Educators who suggest that it is important to bring the widest variety of adult personality types into the learning process, simply in order "to give the child a better sense of the world," may be operating on premises that are quite naive. Those competitive people who are attracted to teaching, if they also show some ability, may quite rapidly be promoted out of the profession.

Teachers may spend a good deal of time taking graduate courses which raise their salaries without commensurately raising their productivity as teachers.

Teachers' unions (and arguably the goals for which they stand) tend to flourish in a situation where there are few rewards and punishments to differentiate one teacher from another and may, therefore, be expected to exercise their institutional bias in favor of preserving and even expanding such relatively incentiveless schemes as the single-salary pay schedule. Thus, the current pattern of reward and punishment in the nation's schools feed powerful forces outside itself that nevertheless tend to perpetuate it.

A HISTORICAL VIEW: WHAT INCENTIVE SYSTEMS DESIGNED DIRECTLY TO SECURE PROFESSIONAL EXCELLENCE AND HIGH PRODUCTIVITY HAVE THE SCHOOLS TRIED OUT IN THE PAST?

Scientific Management

See earlier discussion.

Merit Pay

So-called merit pay schemes had a considerable vogue among school administrators during the 1960s, a vogue which by now has almost completely passed. The theory was very simple: there should be pay differentials among teachers based upon their evaluated worth as a teacher. Merit pay was designed to cope with two problems that seemed to become acute shortly after 1960: the need to attract greater numbers of high-ranking college graduates to the profession and the snowballing demoralization in many inner-city schools.

Teachers do not like merit pay, and their opposition to it has been the main reason why merit pay is not more widespread today. The teachers' central claim has been that neither suitable criteria nor unbiased methods of judgment can be developed for use in merit pay programs. They have also been opposed on more philosophical grounds, e.g., it would encourage conformity and a closed atmosphere among teachers.

Regardless of the "rightness" of their claims, the teachers' opinions must be given substantial weight and respect. Moreover, as Mahdesian (4) has pointed out, there are great practical advantages in having a pay scale (like the single-salary schedule and unlike merit pay) that the employees of a system--here, the teachers--like.

WHAT NEW INCENTIVE SYSTEMS HAVE BEEN DESIGNED TO INCITE PROFESSIONAL EXCELLENCE AND HIGH PRODUCTIVITY AMONG EDUCATIONAL PERSONNEL?

Differentiated Staffing

Differentiated staffing is the generic name for a wide variety of programs which are based on the premises that the ordinary, traditional classroom teacher performs a number of different roles and that a better, more productive utilization of teaching personnel can be achieved by separating those roles, one from another, and assigning them to different personnel. Thus, the teaching staff of a particular school, or even a single classroom, is marked by specialization and a hierarchy of responsibility. Along with the hierarchy of responsibility, plans for differentiated staffing almost universally call for a hierarchy of rewards as well.

A typical differentiated staffing program in skeletal form might have four different teaching positions. The nearest equivalent to the ordinary classroom teacher of today would be someone called "staff teacher." A staff teacher would need a B.A. and a certain amount of experience, and his or her salary range, with tenure, would be approximately that of the ordinary teacher under a single-salary schedule. The staff teacher would take charge of classes on a day-to-day basis and would have no responsibilities other than teaching. Below the staff teacher would be someone called "intern," or "associate teacher." This would be someone with a B.A. or someone doing student teaching. The intern would assist the staff teacher in carrying out classroom responsibilities, but his primary purpose would be to learn. It would be expected that most of these interns or associate teachers would be people in the first year or two of their teaching careers. Their salary schedule would be slightly below that of the staff teacher and would have a low maximum. Directly above the staff teacher would be a position called "senior teacher." This position would require a master's degree and probably a good deal of experience. It might be expected that senior teachers would be chosen due to their high merit as staff teachers. Their chief function would be to implement the school's goals and objectives in the classroom, by introducing new curricula or teaching methods, by observing current curricula and methods, and by supervising. They would carry only 60 percent of the actual classroom responsibility imposed on a staff teacher. Their contract would be for 10 or 11 months and would call for a salary range that approximates the range of the school's principal. The position would not carry tenure. At the top of the hierarchy would be the master teacher. There would be relatively few of these, in comparison to the numbers of staff teachers or even to the numbers of senior teachers. To become a master teacher would require a Ph.D., or a truly outstanding reputation, or both. The master teacher would be responsible for developing curricula and teaching methods suitable for use throughout the school and for preserving the quality of existing ones. The master teacher would have 40 percent of the staff teacher's classroom responsibility. His or her 12-month contract would provide for salaries equal to the top ones in the school district's administration, but he or she would have no tenure.

As an incentive system, differentiated staffing might thus work to give people within the profession the hope of earning more money and responsibility. Furthermore, it might attract highly gifted individuals to the profession by demonstrating that teaching provides real outlets for their personal ambitions. Moreover, the fact that senior and master teachers would not receive tenure would give these most highly rewarded personnel a substantial incentive to stay on their toes.

Critics of differentiated staffing have often said that it is essentially merit pay in disguise; and supporters of differentiated staffing have angrily denied the charge, saying that merit pay categorizes solely according to quality whereas differentiated staffing categorizes essentially according to differences in function and skills.

One of the most interesting and promising differentiated staffing models is English's (2) "learning stage model," in which all vertical hierarchies are fluid and capable of being changed completely around from one project to another. In this model, rewards are also fluid, and the "kitty," whatever it is, is divided as the teachers themselves on a given project see fit. By comparison to other differentiated staffing designs, the learning stage model might be considered to be quite progressive, insofar as it takes cognizance of the fact that there is increasingly widespread demand--throughout the nation and not just in the teaching profession--for jobs in which a person can feel that he has a genuine say in all that goes on around him and that in his dealings with his colleagues he is not [illegible] to the often stifling and unreal rigidities of preformed organi[illegible] charts.

It is of fundamental importance to examine an idea such as differentiated staffing in terms of specific attempts at its implementation. Each attempt will presumably have its own goals and objectives. At the same time, however, there are virtually no differentiated staffing plans that have been in operation long enough to justify any kind of confident and fair analysis concerning the extent of their success or failure.

Temple City, California has performed the most celebrated differentiated staffing experiments. The hierarchy implemented in Temple City is not much different from the one described above. It is difficult to judge the success or failure at Temple City because the program there, aside from a certain emphasis on individualized instruction, has put forward few clear goals and objectives for itself other than the goal of giving the very idea of differentiated staffing a good trial. Stout and Burke (5) discovered a good deal of discontent with differentiated staffing among Temple City teachers.

Williamsville, New York's efforts at differentiated staffing are noteworthy because they grew organically out of previous experiments with team teaching and previously set goals of individualized instruction and continuous progress. The fact that differentiated staffing in Williamsville grew out of real educational needs may have contributed substantially to its success there, as well as the fact that the vertical hierarchy in Williamsville is both informal and flexible.

The "MARC" plan proposed for the Washington, D.C. schools by a team led by Kenneth Clark has run into severe opposition from the teachers' union there, perhaps in part because more than in most differentiated staffing plans, certainly more than in Williamsville or even Temple City, the differentiated staffing designations are conceived of as ranks rather than roles.

Performance Contracting

Performance contracting, as the term is now used in educational parlance, describes a plan whereby an individual or company, acting as an independent agent, contracts with a school district to teach students a certain well-defined subject area, for instance, the skills of reading or arithmetic. The contract specifies how much improvement is guaranteed by the contractor, and part or all of the payment due the contractor is predicated on the students improving as much as the contractor said they would. Katzman points out that "the major tenet of performance contracting is that if school systems or contractors of school systems were paid on the basis of how much they taught, the educational process would be more effective, more efficient, and more progressive." Moreover,

> The presumptions underlying this tenet are that 1) the important aspects of educational performance can be measured reliably; 2) the impact of school resources on learning can be separated from non-school influences; and 3a) there exists a powerful educational technology that would be adopted under the proper incentives, or less strongly, 3b) a powerful technology could be developed given the proper incentives for invention and innovation. [3:6]

The first problem that performance contracting must face up to is that the incentives offered may serve as incentives not merely for high teacher productivity but for a number of unfortunate activities as well, activities which in fact serve to reduce teacher productivity: teaching to the test, making unreasonable demands on students (or teachers) without proper foundations, the breakdown of communications and sharing among teachers, and several others.

Then, too, performance contracting faces problems connected with the need to evaluate accurately the amount of progress in student learning that has been achieved. Standardized norm-referenced tests are likely to measure a somewhat different set of objectives from those set out by the local school district; such tests also ignore local cultural differences; and over the years, many, many teachers have complained that results on such tests simply do not square with their personal, in-class observations of student achievement.

Criterion-referenced tests may hold more promise for performance contracting than the more traditional norm-referenced tests. The distinction here is between tests which reflect what a student can actually do (the criterion-referenced tests) and tests which reflect how students compare with others (the norm-referenced tests).

One phenomenon of which experimenters with performance contracting should be especially wary is the so-called Hawthorne effect. The Hawthorne effect is the tendency of first results to show greater "gains" or "improvements" than can be expected from long-term implementation of the experimental program due to the initial burst of energy and enthusiasm which surrounds the experiment. The Hawthorne effect is likely to be especially strong in performance contracting because performance contracting involves very clearly laid out conditions; the participants know right from the beginning exactly what they are striving for and how they will be measured.

There has been substantial resistance to performance contracting, on both technical and philosophical grounds. Perhaps one constructive way of dealing with such resistance would be to couple the presentation of performance contracting with the presentation of programs designed to propose or elicit new or improved teaching techniques, techniques which would be helpful in the fulfillment of the contract.

Among the more notable experiments with performance contracting have been those which took place in Texarkana, Texas/Arkansas and Portland, Oregon, as well as those contracted for by the Office of Economic Opportunity involving twenty school districts, six private firms, and two teachers' associations.

CONCLUSION

The present pattern of rewards and punishments, dominated by the single-salary schedule, is not adequate for the nation's schools, especially in these times of crisis when the very best teachers possible are needed.

The new incentive systems proposed as alternatives to the single-salary schedule have great potential, but their potential is unlikely to be realized in the forms in which they have been proposed. The fierce opposition of teachers, stated on both technical and philosophical grounds, bodes ill for them. Teachers can wreck any new incentive plan by letting the new incentives incite them to all the wrong things (teaching to the test, etc.) or by letting low morale seep into all their professional conduct. Strikes and sabotage are, in the long run, their lightest weapons.

The opposition of teachers to the new incentive systems is ordinarily articulated on a technical level. They complain about the inadequacy of evaluative procedures and, in particular, about standardized tests. The problem of accuracy must be dealt with not only by better standardized test design but also by having the tests used in an incentive program measure only the achievement of the program's objectives, no more and no less. The narrowness of the notions of productivity embodied in standardized tests must be dealt with by assuring that the incentive systems using the standardized tests are limited in their application to those learning areas in which narrow notions of productivity are apt.

On top of their technical complaints, teachers often erect a superstructure of philosophical resistance to incentive programs: teaching isn't like business, it isn't product oriented, etc. This too must be taken seriously. Those things in education which are not product oriented should perhaps be preserved from the incentive programs; those things which are product oriented can perhaps benefit from the programs.

Below both of these levels of teacher opposition, advocates of incentive systems see a kind of netherworld, a world of base, selfish motives, which many of them suspect are the only real reasons for teachers' resistance. It is all but impossible to say whether this is true, but, if that is how proponents feel, it would be well for them to give the closest possible scrutiny to the teachers' "selfish" opposition. On the one hand, teachers seem not to care about the money available in incentives. On the other, they seem to believe that incentive schemes are tricks to avoid paying them more money. Are there good reasons for either of these apparent beliefs? Could there be good reasons for both? The answer seems to be yes.

It is not too difficult to see how, when measured against the educational values they cherish, teachers would find money values which might lead them to abandon educational values inadequate. That would be nothing more--nor less--than professional devotion. At the same time, teachers of course need and want money and would be resentful of a plan which claimed to offer them more of it when in fact it did not. In industry, there may be cases in which incentive systems offer more total money to all workers over the long term, due to higher productivity; and in some cases, advocates of incentives in education may have led teachers to expect the same, as pure bonuses have been set out to lure teachers into participation in an experiment. But in fact, few can doubt that a chief lure of incentive schemes for administrators is an increase in productivity achieved within the confines of budgets which, in the coming years, are unlikely to grow at any more than a very slow, steady pace. Thus, all that is really being offered by the new incentive systems is the same old pot, divided slightly differently. That no incentive plan when it is implemented actually reduces anybody's salary for the moment is a matter of sheer political expediency, perhaps expedited by some temporary outside funding. In the long run, in fact, it may well be that the teachers' pot will expand more slowly than before, because the incentive plans are likely to divide and weaken the teachers' unions.

Advocates of incentive schemes must face up to the fact that teachers know there is no "pot of gold" in incentive schemes. They should appeal instead to the higher motives of teachers. They should ask teachers to be selfless. Of course,this kind of approach will not work if it is just a trick, if sacrifice is demanded for purposes that are unworthy of sacrifice, and are seen to be unworthy. But this need not be the case. Surely the whole profession is aware of the crisis in education, the phenomena of apathetic and demoralized schools, of children not learning. It is not too strong medicine for teachers to be told of the need for talented newcomers, nor is it too strong medicine for them to be told that there is a need to stimulate a percentage of themselves. But it is imperative that teachers see the specific goals and objectives for which their sacrifice is asked, and that they believe in those goals and objectives, and believe that their sacrifice will contribute something towards their attainment. The "crisis in education," and the way out of it, must be brought down to the context of the local community and of the individual teacher. The setting of local goals and objectives must precede the demand for incentive programs and must call for them as of necessity.

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An abstract of "Report of a Literature Search
and Analysis of the Findings of That Search: Reward
Systems in Education," by Robert D. Bhaerman

SUMMARY

Herein are discussed the current reward system for educational personnel in elementary and secondary school systems, including the single-salary schedule, collateral or "fringe" benefits, assumptions of the single-salary schedule, shortcomings of the single-salary schedule, and identifiable salary approaches; and efforts to change the current reward system, including four mechanistic approaches, differentiated staffing, the Hawaii plan, a "fluid" hierarchy, opposition to differentiated staffing, old-style and new-style merit pay, performance-based teacher certification, and other efforts to change the reward system, including PPBS, combat pay, extra pay for extra work, and the extended school year.

ERIC DESCRIPTORS

*Elementary Schools
*Incentive Systems
*Rewards
*Secondary Schools
*Teacher Motivation
Educational Innovation
Literature Search

THE TASK

What is the current reward system which exists for educational personnel in elementary and secondary school systems? What efforts are being made toward changing this reward system?

THE CURRENT REWARD SYSTEM

The single-salary schedule

The single-salary schedule is a graduated scale that takes into consideration years of service (referred to as "steps") and extent of academic preparation (often referred to as "columns"). Teachers at each level are paid on the same schedule, if their preparation and experience are the same in quantity. The single-salary schedule, with all its limitations and embellishments, has been easy to administer and, to this date, has been accepted by most school boards and teachers' groups.

For various reasons, differentials have sometimes been introduced into the single-salary schedule. For instance, the precedent of offering advanced salary credit for industrial experience has been utilized by school boards to obtain teachers in shortage areas.

Practices in compensating administrators still vary considerably, but salary schedules are now usually uniformly applied to all who meet the requirements. Departmental chairmen and other supervisors may often receive a differential above a teacher's salary.

Collateral or fringe benefits

Among fringe benefits, the following can be listed:

1. Time off with pay: vacations, holidays, military training, personal absences, professional absences, and expense allowances;

2. Protection: life insurance, health and accident insurance, hospital and medical insurance, liability insurance, retirement, social security, and severance allowances; and

3. Incentive and improvement: tuition refunds, tuition payments, scholarships, incentive increments, professional improvement credits, noninstructional training programs, expense allowances, and professional affiliations.

In addition, numerous noneconomic benefits, referred to sometimes as "psychic income," often accrue to teachers as a result of their positions, e.g., position security.

Assumptions underlying the single-salary schedule

Seven assumptions underlying the single-salary schedule have been identified by Christenson:

1. Teaching all children in all subjects is of equal importance.

Therefore, there should be no difference in the compensation a teacher receives, whether she teaches kindergarten or high school science, provided she meets the certification requirements.

2. Teachers should be encouraged to teach the subject and level in which they are most interested and avoid seeking change merely because the salary is more attractive for teaching another subject or at another level.

3. The more knowledge a teacher has, the more knowledge she is able to transmit to her class. The more professional training she has in courses, the better she becomes as a teacher.

4. The longer a teacher teaches, the more her salary should be. This assumption varies considerably in practice, inasmuch as some salary schedules provide for ten steps, others fourteen, and still others twenty. . . . Related to this assumption is the idea that an employee's salary should be greatest when he needs it most; that is, when he has a household to support--a heavy responsibility that usually reaches its peak after ten years of service.

5. Salary schedules should be formulated so as to minimize frictions and dissatisfaction among teachers which would detract from their professional performance. The certified elementary school teacher does not believe that her work is less important than teaching high school students or that she should be paid less because of her level. Differences in salary based on sex, need, influence, or other factors irrelevant to the teaching process are equally objectionable to teachers.

6. Salary variations or special incentives are extrinsic, unnecessary and undesirable stimuli for the professional improvement of teachers. As professionals, teachers seek to improve because of their interest in children and their acceptance of professional obligations.

7. From the administrative point of view, single-salary is desirable because of the ease with which it can be administered. A clerk who has little training can determine the class and step on the schedule on which to place a teacher if he knows the number of units completed and the number of years taught. Individual bargaining and arguments are also reduced. [8]

Shortcomings of the single-salary schedule

While both the American Federation of Teachers and the National Education Association support a salary schedule based upon preparation and teaching experience, a number of pressures have been felt within the past few years to expand the number of factors which make up the base of the single-salary schedule. This movement is based upon a number of shortcomings cited (here by Greene) for the single-salary concept.

1. Unfortunately the single-salary schedule frequently rewards sticking it out, and accumulating pertinent and nonpertinent credits. From the businessman's point of view, it does not reward initiative, creativity, efficiency, enthusiasm, innovation, cooperation, ability, or improved teaching performance.

2. The beginning step on most salary schedules is adequate for the experience and academic preparation of the novice. But most single-salary schedules are inadequate for the "career professional" who continually strives to be a better teacher.

3. Many teachers are highly trained and capable specialists who resent the fact that their less capable colleagues are on the same salary schedule.

4. Some men and women enter the profession in the middle years of life. Many have served a successful tenure in another field. How is it possible to justify a starting salary for them at the novice level because of the single-salary schedule?

5. The single-salary schedule is unresponsive to the law of supply and demand in teaching skills. From time to time a teacher shortage has been acute in one field while another field has had a sizable oversupply. Thus the person who majors in physics with the intention of becoming a physics teacher may well find that he can earn two to three hundred dollars more in industry than he can in education.

6. The public finds it difficult to understand and accept the single-salary concept in many situations. For instance, two third grade teachers may be assigned next door to one another, one a beginning teacher with a $7,000 salary and the other an experienced teacher with a $14,000 salary. What is the difference in role expectations of these two individuals? Each teacher may have thirty children; each teacher follows the same curriculum; each teacher works the same number of hours; each teacher is expected to produce equally good results in learning. Why is it necessary to pay one teacher so much more than the other? [14:222-23]

A Summary of Identifiable Salary Approaches

According to Formhals (13), there are eight basic salary approaches: ability and performance, academic preparation, rank, merit, "single feature" (of a teacher's work), seniority, standard scale plus (later) bonus, and education-experience-ability.

The "single-salary" schedule is actually something of a misnomer. Technically, it should be called the "dual-salary" schedule, because there are two factors which determine its pattern: years of teaching experience and extent of college or university preparation. The basic changes being contemplated are toward expanding this dual base into a multifactor salary determination.

EFFORTS TO CHANGE THE CURRENT REWARD SYSTEM

Four Mechanistic Approaches

Formhals, Brown, Brubaker, and Bruno have all formulated compensation schemes in which criteria for determining pay are related to one another by mathematical formulas. In computing salary, Formhals' (12) "compensable factor method" considers a) responsibility, b) job conditions, c) education and skill, and d) mental and physical effort. Brown's (1) "management criteria" are a) educational level desirable, b) experience level required, c) pupil responsibility, d) scope of responsibility and impact of judgment, e) autonomy of operation, f) interpersonal relations and tension level, g) level of fiscal and/or confidential data responsibility, and h) scope of supervision. Bruno's (4,5,6) "linear programming model" takes into consideration whatever criteria the local authorities deem important (among which might be considered location of school, subject matter taught, supervisory responsibilities, academic degrees, experience in district and in other districts, special distinctions, etc.) and then applies equations to them which will show what the most highly qualified person for any set of functions might be paid as opposed to what a minimally qualified person might be paid. Brubaker's (2,3) "establishing the base" method applies formulas to a wide variety of components to determine the base salary for teachers in a system.

It is highly likely that these four approaches will be given due consideration over the next few years as school boards attempt to depart from the traditional salary bases. But they are not now well known. The more familiar attempts to depart from traditional salary bases are differentiated staffing (in which the basic salary factor is the level of responsibility) and merit pay (in which the basic salary factor is either the level of competency or the end product or results).

Differentiated Staffing

The most widely used definition of differentiated staffing has been the following: "A division and extension of the role of the teacher through the creation of a hierarchy with job responsibilities that are commensurate with the range of pay" (10).

Its purpose has been designated as establishing a variety of categories of personnel assigned "in terms of training, competence, career goals, and the difficulty of tasks" (9). Increased levels of responsibility and status are designated to accompany increases in compensation.

One cannot easily generalize about differentiated staffing models, for they vary widely. English (11) has identified at least a dozen, divided into three types: refinements of present notions of staffing; reform; and revolution. In addition, emphases differ: some emphasize organizational restructuring while others may emphasize the teaching component, the learning component, or the curriculum component. No matter how the specific emphases vary, the overall concept is based upon the assumption that, if the range of salaries (based upon responsibility levels) for teachers becomes greater, more people will be encouraged to stay in some form of classroom teaching, and the profession, therefore, will have greater stability.

The Temple City, California model (22) is perhaps the most famous model for differentiated staffing in the country. It is pictured in Table 1.

Among other localities that have either experimented with or considered some form of differentiated staffing are Kansas City, Mo.; Montgomery County, Md.; Portland, Oreg.; Beaverton, Oreg.; Cherry Creek in the suburbs of Denver, Colo.; Fallbrook, Calif.; Greenwich, Conn.; Weston, Mass.; and Robbinsdale, Minn.

The U.S. Office of Education has established several conditions that it deems essential to a viable differentiated staffing structure:

1. No unit will be differentiated smaller than an entire school;

2. The maximum salary of the highest paid teacher is at least double the maximum salary of the lowest category of professional personnel;

3. All of the instructional staff spend at least 25 percent of their time in direct contact with students;

4. All instructional staff in the unit designated as operationally differentiated are on the differentiated salary schedule; and

5. The differentiation of roles of the instructional staff as well as the selection criteria for those roles is clearly defined.

The Hawaii plan. This is one of the most comprehensive differentiated pay proposals that has yet been designed. Proposed by a "think tank" in California, the National Education Planning Associates, it was designed for possible use in Hawaii; however, it has not yet been implemented there. Compensation according to the plan is determined by a base salary to which so-called career unit increments are added for a variety of reasons. Among the reasons why a teacher will receive career unit increments are a) if he or she works at a responbility level higher than the most basic one, b) years of service, c) advanced degrees and other academic credits, d) special working conditions such as extended work schedules, and e) accomplishments in career training components.

Thus, the Hawaii plan rejects the more simplistic attempts of some earlier differentiated staffing models which attempted to structure a hierarchy on the levels of responsibility only, while at the same time going much beyond the traditional components of the single-salary schedule. It is likely that in the near future the Hawaii plan will be much discussed.

TABLE 1. TEMPLE CITY LADDER

Tenure	Tenure	Nontenure	Nontenure
			Master teacher (doctorate or equivalent)
		Senior teacher (M.S. or equivalent)	
	Staff teacher (B.A. degree and Calif. credential)		
Associate teacher (A.B. or intern)			
* 100% teaching	100% teaching responsibilities	3/5's staff teaching responsibilities	2/5's staff teaching responsibilities
$6,500 - 9,000	10 months $7,500 - 11,000	10-11 months $14,500 - 17,500	12 months $15,646 - 25,000
Academic assistants A.A. degree or equivalent $6,000 - 7,500			
Educational technicians $4,000 - 7,500			
Clerks $5,000 - 7,500			

* Teaching responsibilities are denoted on a flexible schedule rather than a traditional schedule. Thus it will be possible for a teacher to instruct as many, if not more, students per week though the actual time interval may be reduced.

A "fluid" hierarchy. One of the most positive signs on the horizon is the concept of fluidity in differentiated staffing. Presented by English (11), it simply means the possibility of staffing patterns which are in a constant state of forming and reforming around specific tasks. Many of the problems with static or rigid hierarchies--particularly the reward systems--might be obviated with this approach.

Such a fluid hierarchy model is not preformed prior to implementation, but on the other hand it might have the capacity to be responsive in many ways--depending on the task at hand. The vertical aspects--particularly of salaries--would be dependent on the current situation.

Opposition to differentiated staffing. Many opponents of differentiated staffing, particularly teachers, say that it is merely merit pay in disguise. It is not, but the fact remains that the movement up the hierarchical ladder of differentiated staffing schemes often involves the same questions as movement upward within a merit pay schedule: How is evaluation used? To what end? Who does it? What criteria are utilized? How does one avoid the unfortunate side aspects of school politics and "brown nosing?"

Merit Pay

Merit pay is most commonly defined as a "recorded judgment about a teacher which determines at least in part the amount of his salary and may affect the rate of salary progress or ultimate maximum" (30).

Actually, in the last few years it has become necessary to distinguish between two major types of merit pay, which this writer chooses to call "old style" and "new style." The traditional, or old-style, merit pay is characterized by its use of rating scales devised to assess such input factors as excellence in classroom instruction. This old-style approach is used only in about 130 of the nation's nearly 20,000 school districts.

The new style is something else. It is based on output factors, that is, end results.

Four assumptions--both implicit and explicit--seem to underlie a merit system: a) good teaching should be rewarded with more money, b) the good teacher can be evaluated, c) money will motivate the good teacher to stay in the profession, and d) the school system only needs good teachers to make it run smoothly and efficiently.

Merit pay--old style. Essentially there are two major "merit issues"--a) evaluation and rating and b) salary and rewards--but because of the scope of this paper the emphasis here will be on the second of these.

A National Education Association survey of merit pay (20) shows the following localities with some variety of a merit pay scheme: Glendale, Ariz.; Arcadia, Chula Vista, Marysville, Rowland, and Visalia, Calif.; Elk Grove, Evansville, and Park Ridge, Ill.; Cedar Falls, Iowa;

Needham, Newton, and Wellesley, Mass.; Gulfport, Miss.; Ithaca, N.Y.; Princeton, Ohio; Cheltenham Township in Elkins Park, Lower Merion Township in Ardmore, North Hills in Pittsburgh, Upper Derby, Upper Merion in King of Prussia, Warren, and West Chester, Pa.; Puyallup and Shoreline, Seattle, Wash.; and Elbrook Schools, Brookfield, Wis. Moreover, the journal *Salary and Merit* has reported on plans for versions of merit pay in Anahuac, Tex. (18); Wayne Central School District, N.Y. (23); Salina, Kans. (26); Marblehead, Mass. (17); Milford, N.H. (19); Rich Township, Ill. (25); and Winona, Minn. (31); as well as on a number of theoretical models for merit pay devised by the Educational Service Bureau, Inc. The Council for Basic Education has published reports on additional plans for merit pay in Barrington, Rich Township High School District in Park Forest, and New Trier Township high schools in Winnetka, Ill.; Ladue, Mo.; Summit, N.J.; and Rose Tree Media School District, Media, Pa.; as well as a series of articles on alternative plans to merit pay, which have included, in addition to Temple City's differentiated staffing plan, unusual pay plans in Beverely Hills, Calif.; Columbus, Ind.; Grosse Point, Mich.; Irvington, N.Y.; and San Mateo, Calif. (29).

Merit pay, old style, has long been a subject for controversy in school districts where attempts have been made to introduce it; and such controversies continue, as in Englewood, New Jersey in 1970. The questions outlined previously under the heading "Opposition to Differentiated Staffing" plague the minds of teachers confronted with merit pay schemes.

Merit pay--new style. In the last few years, overburdened taxpayers, squeezed by the financial strains of heavy military spending, have begun to explore ways of paying teachers according to output. This is not an entirely new idea; in the 1920s, similar schemes abounded. But it is an idea that has long lain dormant.

One of the clearest explanations of the output approach has been made by Allen Calvin (7). The essence of his proposal is that school boards should reward teachers who achieve certain objective goals in the classroom:

1. All members of a particular class reading at grade level,

2. A certain competence level on standardized tests of arithmetic computational skills, and

3. Any other activity for which the teacher has previously given a grade.

Calvin suggests that each goal would be tied to some objective measure of student learning:

> Pre- and post-gain scores might be used by some school systems whereas others might want to use an analysis of covariance to take into account differing levels of socio-economic status.

He continues:

> Even in subject matter areas where objective criteria are now difficult to find, it would be possible by using a double blind rating system to create an adequate objective measure of student achievement. If a student is now being given a grade which rests on the judgement of the teacher, it is then obviously possible to objectify student performance at least on an ordinary scale. [7:97-98]

Another form of new-style merit pay is of course performance contracting. George Voegel (28) has done some of the most important research in this field. Cherry Creek near Denver, Colo.; Portland, Oreg.; and Dallas, Tex. are places where significant consideration has been given to performance contracting. Moreover, Kenneth B. Clark (16,24) has proposed for the Washington, D.C. schools an ingenious mixture of differentiated staffing and performance contracting, primarily to improve the reading skills of the young children in these schools. Clark has proposed that teachers be classified and salaried on a four-track system--beginners, staff teachers, senior teachers, and master teachers--and that promotion from one category to another depend in large part on student advancement in achievement tests in reading and math. While the Clark plan involves a number of controversial points, the proposal which teachers singled out as most intolerable was the one regarding the use of test scores as a basis for rank, pay, and promotion.

Performance-based Teacher Certification

In a number of states, significant changes are being contemplated, which, if implemented, would alter certification patterns. Instead of requiring merely the submission of credits, the performance-based approach would incorporate evaluations of teacher and/or pupil performance as factors in certification.

While it is premature to predict the future of performance-based certification, it is mentioned here for its potential effects on the reward system of teachers. In the beginning only entering, preservice teachers would be directly affected, but, if certification levels or ladders are ever extended, there would be effects on in-service teachers.

The classic statement on this certification issue to date was made by Schalock in 1970.

> The growing dissatisfaction with present approaches to teacher education, the availability of increasingly analytic tools in teacher education and the demand for greater accountability in education generally have given rise to the concept of "performance-based criteria" for teacher certification. In general terms, such certification asks that the criteria--whether knowledge and/or behavior and/or the products of behavior--be made explicit, and that the students of teaching be held accountable to those criteria.

> Central is the issue of whether performance beyond the knowledge level should be defined in terms of teaching behaviors, the products of teaching behaviors, or some combination. On philosophic as well as on practical grounds, the question is real and of utmost significance to education and teacher education in the decades to come. . . . The bias is toward certification criteria that focus upon the products of a teacher's behavior per se; for the products that derive from teaching are after all that which education is ultimately about. It is also resonably safe to assume that these are also the criteria by which teachers and the teaching profession will be held accountable in the future. [27:48]

Other Efforts to Change the Reward System

Planning Program Budgeting Systems. Myers has done a good job in summarizing the concept.

> PPBS is essentially a different method for reporting district expenditures. The old or present system has a large category called classified personnel, another category called certificated personnel, another titled textbooks. Critics of the present budget system say that no one can tell what programs the money is being spent for and how the results (output) compare with investment (input). PPBS is a budget system that states anticipated results (output or objectives) and money spent on specific programs (a budget category called English or Language Arts replacing such general categories as textbooks and instructional materials). [21:1]

As Hartley has pointed out:

> Instead of seeking only salary increases and similar benefits from the total reward system in a narrow, self-interested manner, teachers [under PPBS] could, with a program budget, focus upon programs, or programmatic outputs of a school, and seek support for more resources for these programs. It is likely that public support for teachers would be greater if the public could be shown that the various pupil programs would be the major beneficiaries of increased taxes, and not merely the salaries of teachers. [15:6]

Combat pay. In the early 1960s the New York City Board of Education offered extra pay to teachers in the more difficult inner-city schools. This was rejected by the New York City teachers' union but has since been proposed in a number of other cities.

Extra pay for extra work. In response to proposals for vertical staffing and hierarchical staffing patterns, the American Federation of Teachers has often supported the concept of extra pay for extra work; for instance, extra pay for additional curriculum development activities. It appears that in the long run this concept may have a better chance of succeeding than the concepts of extra pay for extra levels of responsibility (differentiated staffing) or extra pay for extra degrees of competency (merit pay plans).

Extended school year. Several developments now in the experimental stage make it possible for school boards to employ some teachers on 12-month contracts. Many teachers might consider such a contract a reward worth working for.

SUMMARY AND CONCLUSIONS

In answer to the original question proposed for this research paper, it is accurate to say that there is no one current reward system for educational personnel in elementary and secondary schools. There are many, although the single-salary schedule is surely the most prominent.

In response to the second phase of the question (What efforts are being made to change the reward system?) a number of thrusts are being made, all geared to increasing the number of criteria used in determining salary. The single-salary schedule considers only years of experience and level of preparation.

Among the new multifactor approaches might be mentioned the compensable factor method, management criteria, linear programming, differentiated staffing, merit pay (old style), and merit pay (new style).

A number of generalizations can be made. Thus, the traditional views of the single-salary schedule, the concept of merit rating (from old to new), and adherence to money as the sole means of motivating personnel are undergoing constant modification. Another trend is clear: collateral or fringe benefits are on the increase and are considered as an inherent part of the compensation structure.

It can also be generalized that old-style merit pay is found mainly in smaller districts, especially those with a relatively high assessed valuation per child and those whose school patrons include a large number of upper-class people. It is unlikely to be generally accepted in large, urban districts.

Experimentation with old-style merit pay for many years has produced no clear cut evidence as to its ability to improve either teaching or learning. The crux of the difficulty in linking compensation to individual teaching performance is the method of appraisal. However, modern appraisal approaches are moving away from plans which involve evaluation of personal characteristics toward plans which attempt to determine how well the individual achieves his goals or results (accountability). Under these new plans, pay progression would be determined by one's ability to achieve the established goals (payment by results).

It is also evident that a great degree of interconnectedness exists between some of the newer approaches to rewarding teachers; e.g., between differentiated staffing and merit pay (both old and new styles) and between new-style merit pay and PPBS (the accountability and output movement).

Among the many factors which are being suggested as supplements to the dual-factored single-salary schedule, some appear to be more acceptable to teacher groups than others; e.g., extra pay for extra work rather than merit levels, competency levels, responsibility levels, and accountability levels. However, the debate will continue focus on the question: Which of the many factors being suggested are workable?

The debate, of course, is far from being over. While the single-salary schedule, i.e., the dual-factor approach, is being questioned and while a multitude of factors are now being suggested, a new conception of the single-salary schedule is now being formulated. This is the concept of equal pay, which endeavors to break down those salary barriers among educators that even the single-salary schedule has not eliminated (e.g., the barriers between teachers and administrators) and which may well grow into a powerful movement, even as the movements for greater hierarchical differentiation continue to grow in a quite different direction.

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An abstract of "A Focus on the Cooperative Reorganization of Preservice and In-Service Teacher Education Programs," by Thomas H. Peeler and Jerome R. Shapiro

SUMMARY

Herein are discussed the traditional model of local school involvement in preservice education, including its weaknesses; selected models of preservice education stressing local involvement, including the Florida Experimental Program in Elementary Education, the Cooperative Student Teacher Center concept, the Mercer County Teacher Education Center, other variations on the traditional model, and the Model Teacher Education Project of the U.S. Office of Education; local school involvement in in-service education, both past and present; emerging trends of in-service education in the 1970s; and the reorganization of teacher education.

ERIC DESCRIPTORS

*Conventional Instruction
*Demonstration Programs
*Educational Innovation
*Inservice Teacher Education
*Preservice Education
Teacher Education

THE TASK

What has been and should be the role of local education agencies in the development and implementation of teacher education programs (both pre- and in-service)?

INTRODUCTION

The importance of school accountability is definitely being stressed today not only in the educational literature but in speeches and the popular press as well. To profit from this new era of accountability, it seems essential that educators reexamine the educational process and specifically the teacher, often identified as the most crucial variable within this process. If teacher behavior is to change, the methods and procedures for the education of teachers must also change.

LOCAL SCHOOL INVOLVEMENT IN PRESERVICE EDUCATION: THE TRADITIONAL MODEL

It is ironic that the public school, as the recipient of the graduates of teacher education institutions, has had only limited influence with these institutions in the developing of programs. Indeed, throughout the history of teacher education, the role of local schools in the training of future teachers can best be described as minimal. The extent of cooperation between the teacher training institution and the local school is typically confined to the matter of placement of student teachers.

Weaknesses in Traditional Student Teaching Methods

The traditional student teaching model has constituted the only major degree of local school involvement in the preservice education of teachers during the sixties. In an analysis of this traditional model, the following weaknesses emerged:

1. The inadequacy of methods courses as they presently exist and as they relate to teaching in public schools,
2. The lack of correlation between the theory and practice phases of preservice education,
3. The inadequacy of the time period allotted for the student teaching;
4. The lack of control over the quality of the supervising teacher, and
5. The lack of "reality" in the practice teaching phase of preservice education.

Conclusion

From a review of the literature, the necessity for greater cooperation between the public schools and universities is becoming apparent. Most educators agree that internship is vitally important and that the extension of this phase of preservice education would help to close the gap between theory and practice. However, they also agree that mere extension of the period of internship will not automatically produce highly competent professional teachers. The quality of the experience must also change, and it is here that local efforts could have a great and salutary effect.

SELECTED MODELS OF PRESERVICE EDUCATION STRESSING LOCAL INVOLVEMENT

Enlightened educators have attacked the traditional model and have begun to search for alternatives. There are several basic changes which these programs call for.

1. Greater emphasis on a merging of theory and practice,

2. Extension of the internship period with a recommended minimum of one year,

3. Qualitative changes in the cognitive content of university course offerings in education,

4. Greater provision for suitability and applicability of content in teacher education programs, and

5. Closer, more productive cooperation between the university and the public school.

It is the intent of this chapter to outline various programs of teacher education which attempt to overcome the weaknesses of the traditional model.

The Florida Experimental Program in Elementary Education

This program aims to accelerate change in teacher education and attempts to narrow the gap between theory and practice. As soon as the student enters the program, he is involved in some form of local school experience. The organizing principles of the Florida program are that one learns best when a) learning is made personally meaningful and relevant and is adjusted to the rate and the needs of the individual, b) self-direction is emphasized, and c) theory and practice are closely related.

The resulting structure of the program has three parts, the first of which is the seminar. There are three seminars currently in operation consisting of one faculty member and thirty students each. The second part of the program is called the "substantive panel." Faculty members of varying specialties which pertain to the curriculum in the elementary school help the seminar students to develop competencies in various areas. There is no course content in the usual sense. Students determine how and how fast they will achieve competencies that have been determined by the panel on the basis of the students' entering proficiencies. The panel members are available for small-group and individual consultation with students. The third part of the program, the field experience, relates directly to local involvement and contains some novel elements. A student immediately engages in some aspect of teaching upon entrance into the program. With his seminar leader, he selects an appropriate level of experience.

The faculty members involved in the Florida program feel that by subdividing methods courses into a series of competencies and by requiring students to work with children to achieve these competencies, a much more efficient program is provided--one that serves to bridge the gap between theory and practice.

The Cooperative Student Teacher Center Concept

VanderLinde defines a cooperative student teaching center as "a field unit for the supervision and instruction of student teachers and teacher interns" (3:53). He describes the center as generally having 15 or more student teaching stations located in nearby schools. The responsibility for developing and supervising the program is shared by the college and local school. Generally, some sort of committee or advisory board (reflecting this collaboration and its membership) is reponsible for supervising and directing the student teaching phase. From his survey of existing cooperative student teaching centers, VanderLinde extracted some common specific objectives.

1. To foster communication between the local schools and the teacher training institution,
2. To expand the scope and the responsibility involved in decision making,
3. To make teacher preparation a matter of teamwork,
4. To facilitate more efficient procedures and policies through improved organization,
5. To establish ways of providing in-service education for supervisory personnel, and
6. To provide an experimental setting for the analysis of teaching.

Those activities that he found common to the centers that he examined are as follows:

1. They are providing for cooperative training of local and university personnel in providing new directions for the laboratory phase of teacher preparation;
2. New types of administrative structures are being devised, and new roles are being defined;
3. Lines of communication between the school and the university are being improved;

4. All the centers he surveyed are providing for pre-student teaching observation, and some are providing foundations and methods courses in an off-campus setting;

5. Centers are providing for innovation and experimentation in educational practices; and

6. They are actively searching for new techniques and instruments for analyzing teaching.

Mercer County Teacher Education Center

This project revolves around a cooperative center organized and operated by Bluefield State College, Concord College, Mercer County Public Schools, and the West Virginia Department of Education.

The center was designed for the improvement of teacher education and grew from the following assumptions:

1. Teacher education preparation can be accomplished best in the "action" atmosphere of the public school and the local community;

2. For effective teacher education, cooperation between the university, county, and local community is essential;

3. The public schools of the future will play a more active role in the preparation of teachers;

4. Teacher preparation should be based on educational experience modules, many of which will require on-site experience in the public school setting;

5. Local district staffs and college facilities have much to gain through joint in-service ventures;

6. The center concept offers many benefits to beginning teachers;

7. Graduate credit should be an integral component of continuing education; and

8. The center, through its advisory committee, offers unique opportunities for control over the program.

Other Variations on the Traditional Model

Additional variations include the Secondary Teacher Internship Program at the University of California at Los Angeles; the Lincoln School Clinical Module Project in Washington, D.C.; the Florida Atlantic University--Dade County Teacher Education Project; the School University Teacher Education Center in New York City; the Teacher Corps; the policy of the Los Angeles City Schools towards teacher preparation; the Grand Valley State College Teacher Preparation Program; and the Cooperative Program--University of Illinois at Chicago Circle.

Ten Model Teacher Education Programs

A far-reaching and innovative attempt to conceive a total approach to teacher education at the elementary school level is the Model Teacher Education Project of the U.S. Office of Education. Although the 10 accepted programs are diverse in nature, they all stress the importance of behavioral objectives and systems analysis.

LOCAL SCHOOL INVOLVEMENT IN IN-SERVICE EDUCATION: THE PAST AND THE PRESENT

The educational institution, as all of society's institutions, has experienced great change and innovation in the past decade, perhaps more in this period of 10 years than in all the preceding 50.

As each innovation appeared on the educational scene, many schools looked to the traditional means for disseminating them to practicing teachers--summer or after-school workshops. Even progressive schools soon found, however, that as soon as teachers became acquainted with the basic elements of a new concept, technique, or method, one or several additional or significant innovations emerged. The inevitable conclusion is that the traditional models of in-service education are inadequate for the vital task of creating long-range continuous programs for teachers in service.

After surveying the literature of the past decade, we have discovered the following recurring weaknesses among existing in-service programs:

1. They have restricted their focus to the remediation of teacher weaknesses, rather than capitalizing on current teacher strengths;
2. Their objectives have been irrelevant to the priority needs of teachers, students, and the community as each of these groups has perceived its needs;
3. No one has been held accountable for the success of in-service programs;
4. In-service instructors have had limited recent clinical exposure;
5. Those who have initiated in-service programs have failed to cooperate with local universities and colleges in jointly planning the articulation of preservice with in-service instruction;
6. In-service programs have not taken full advantage of modern communication media, thereby failing to reach a significant number of teachers; and
7. In-service programs have failed to offer adequate incentives to the tenured teacher.

Conclusion

In essence, preparing teachers for innovation is a joint responsibility. With the pressure and responsibilities being placed on education, teacher education institutions and public schools have much to gain from collaborative efforts. It is implied in this chapter that closer working relationships between schools and colleges in planning and conducting not only preservice but also in-service teacher education programs must be established. It has been pointed out by some writers that such relationships have been, for the most part, ceremonial. It has been stressed in this chapter, rather than unilateral decisions by administrators as to what teachers need, the teachers themselves ought to be involved in the decision-making process. New training programs for school administrators and programs geared to the changing needs of the teachers, the schools, and the community must be developed. Davies says that the possibilities for remaking the world of the career teacher through in-service programs are slim without truly cooperative work on the part of both schools and colleges (1).

EMERGING TRENDS OF IN-SERVICE EDUCATION IN BUILDING ON TEACHER STRENGTHS

Building on Teacher Strengths

Waynant (4) emphasizes that relevant and effective in-service programs can be established if they are built around teacher strengths and concerns. She has offered some useful guidelines for planning in-service work based on teacher strength and for providing for maximum involvement.

1. Identify teacher strengths, interests, and concerns through observation and discussion;

2. Utilize teacher strengths, interests, and concerns in planning and conducting the in-service program;

3. Provide a feedback system whereby teachers can inform consultants if information is useful, relevant, and clear enough for implementation; and

4. Guarantee the results of consulting in performance terms.

Maximizing Teacher Involvement

Harris (2) stresses that planning for in-service programs should be a cooperative venture.

Some New Programs

Some of the goals stated above are being pursued in the following programs, among others: Project Bonus, Carroll County, Md.; the California Teacher Development Project; the Jackson County, Colo.

Micro-Teaching Program; the Child Study Institute at Colorado State College; the government-sponsored "TTT" project; B-2--Teacher Training Modules; differentiated staffing programs as they relate to in-service education; the River Rouge, Mich. project; and the Philadelphia Teacher Center. A program which illustrates especially well the benefits to be gained from cooperative planning between local authorities and a university for a specific purpose is the Rockdale County, Ga. project.

Conclusion

It is apparent that greater cooperation of school districts and universities in programs of teacher education can benefit both institutions. Through the establishment of cooperatively developed career ladders, induction into the profession could become a more natural and gradual process. Teachers would move back and forth from college campus to school districts, theory and practice might be more profitably combined, and career education and re-education could be planned for at the outset. Through cooperative planning, the interests and needs of teachers--as well as those of universities, the local school, and the community--could be more adequately met.

Individual teacher needs must be met through new designs, and teachers should have the option of participating in such designs. New roles will have to be defined with in-service instructors having the unique experience of participating in a dual educational environment, familiar with the goals and aims of the university but concerned and knowledgeable about the public school as well.

A major concern of new in-service programs should be the development of incentives for remaining in the teaching profession and for the upgrading of teaching skills. Programs which capitalize on teacher strengths and which stress teacher self-renewal are vital in this regard. The development of differentiated staffing models was suggested as a vehicle for promoting incentive.

REORGANIZATION OF TEACHER EDUCATION

At present, a major weakness in teacher preparation programs is the lack of public school involvement. Issues such as curriculum, internship, and entry rites remain the exclusive responsibility of the university and the state department of education. However, the major criticisms of teacher preparation could be remedied in the public schools through programs that involve working with students in real situations.

Many educators have proposed revisions of the traditional model; the following are representative suggestions.

1. Methods courses are more effective if taught in clinical settings in real-life classrooms;

2. Theory and practice can be used if lectures and seminars are combined with practical application in classroom settings;

3. Pedagogical techniques such as Taba's Teaching Strategy, higher-order questioning, microteaching, and systematic observation can only be effected through direct contact with children;

4. Length of internship must now be viewed as at least a 2-year program with additional years spent in externship before actual entry into the profession; and

5. New and specific procedures for the training of public school cooperating teachers must be devised so that they might become the most highly trained professors in the teacher preparation program.

The vehicle often proposed to transform the above suggestions into programs is the teacher preparation center, in which universities and public schools share responsibility for teacher training. The temptation to hail these centers as the panacea for all problems facing the schools today must be resisted, however. Simply designating centers without substantially improving the competence of the teacher trainers will do little to improve the overall competence of the beginning teacher.

The appointment of the cooperating teacher must be shared by the public school and the university. The time has come to develop a degree program leading to a doctorate for cooperating teachers. These people should be the brightest, most highly trained professionals in education.

A model for teacher training developed by the authors of this paper represents an effort to develop cooperatively a viable teacher education program. Called MOPET, it is characterized by a number of unique features.

1. University student teachers will engage in a program that emphasizes meaningful classroom experiences as the basis for teacher certification and entry into the teaching profession;

2. An in-service program will be implemented cooperatively through a consortium of institutions devoted to teaching, teacher education, and teacher certification;

3. The university and the school system will be restructured to permit a shared instructional responsibility in the teacher education program;

4. Staff in both the university and school system will engage in a continual self-renewal program as data from the various feedback systems might indicate;

5. Teachers of exceptional ability will be afforded opportunities for professional advancement to higher degree status while their services are still being utilized by the public school system;

6. The entry into the profession would now become the responsibility of a consortium: university--public school--state department of education--*community*; and

7. The training of teachers would take place under an "open system" with input and provisions for self-renewal coming from several subsystems: public school, community, university, and state department of education.

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An abstract of "What Has Been and Should Be the
Role of State Education Agencies in the Development
and Implementation of Teacher Education (Both Pre and
Inservice)?" by Joseph W. Crenshaw and K. Fred Daniel

SUMMARY

Herein are discussed the role of state education agencies, including the functions of these agencies and the outlook for them; the role of the agencies as applied to teacher education, including the opinions of the chief state school officers and professional personnel in teacher education and including the role of teacher certification, the input-process-product dimension, specificity of standards, the regulation of in-service education, the literature on the SEA leadership role in teacher education; and three case studies, the state agencies in Florida, New York, and the state of Washington.

ERIC DESCRIPTORS

*Case Studies (Education)
*Inservice Teacher Education
*Preservice Education
*State Departments of Education
*Teacher Education
Educational Development
State Action

THE TASK

What has been and should be the role of the state education agencies in the development and implementation of teacher education programs (both pre- and in-service)?

THE ROLE OF STATE EDUCATION AGENCIES

Public education is a state responsibility. The Tenth Amendment of the federal Constitution assigns to the states those powers which are neither reserved to the federal government nor denied to the states. Among these is education. Admittedly, a great deal of discretion has been traditionally exercised by local school corporations; this has been possible only by virtue of authority granted by state governments.

State education agencies (SEAs) are the executive agencies within state governments which carry out general supervision and coordination of the educational programs of the separate states.

Functions of State Education Agencies

Beach (2) has identified three major types of functions--leadership, regulatory, and operational.

The Regulatory function. The regulatory function, which essentially arises from the specifications of state law and state constitutions, includes the responsibility for approving programs, applying sanctions, supervising, and distributing funds. This function is designed to help protect the lives and health of the children and youth of the state and assure an educated citizenry. The regulatory function is equally concerned with the responsible stewardship of public resources.

Campbell and Sroufe (3) point out that the traditional major functions of the state education agencies--regulation and leadership--have called in the past for a large portion of the state resources allocated to the agency to be channeled toward regulatory activities, while only a small portion of the agency's resources has been available for leadership activities. It is felt by these authorities that in the future this situation will and should reverse itself.

The Leadership function. The responsibilities of all state education agencies have multiplied appreciably in the past 10 to 20 years. Currently, there is a growing emphasis on leadership in planning and effecting improvement. Beach names planning, research, advising and consulting, coordinating, and public relations as leadership functions.

A leadership responsibility of the state education agency, often overlooked (sometimes by the legislature itself), is to advise the legislature, expedite procedures and clarity its rules, and assist in executing many of its statutes.

The manner in which the state education agency operates in providing leadership services differs from the pattern often followed in regulatory activities. The trend is toward a consulting and helping relationship with local schools rather than an authoritarian approach.

The Council of Chief State School Officers has issued two major reports which say much about the leadership role of state education agencies. A statement published in 1952 by the Council entitled *The State Department of Education* (6) lists six aspects of the leadership function of state education agencies: a) planning, b) research, c) consultation, d) coordination, e) public relations, and f) in-service education.

The council's more recent statement is entitled *State and Local Responsibilities for Education: A Position Statement* (7). This document lists state-level leadership responsibilities such as planning, research and evaluation, experimentation and innovation, consultative services, organization for effective services, in-service education, teacher education, certification, and accreditation. It deals more with what the state role should be rather than with what it currently is. Moreover, in this report the advisory and consultative functions of the state agency emerge as its most important roles.

The report assigns to the state education agency a new responsibility. Specifically, the SEA is assigned the function of helping urban communities to prevent dropouts, to devise unique programs to keep potential dropouts in school--at least until high school graduation--and to assist in job placement for those who cannot be kept in school.

The Operational function. Beach reports that by 1950 legislatures in all of the states had assigned at least some operational functions. Operational activities include operating the following: area vocational schools and state teachers colleges; classes in citizenship, adult education, and trades; cultural and educational institutions or programs of service directed at the public at large; and programs of service to individuals including services in vocational rehabilitation, teacher placement, and teacher retirement.

Some authorities, among them Beach, have raised grave doubts as to the advisability of the inclusion of operational functions in the state education agency's list of responsibilities.

The Outlook for State Education Agencies

In an introduction to his study, Beach states, "If state departments of education are to occupy their appropriate place and realize their full effectiveness in service to American society, it is essential that each state will answer for itself three basic questions:

1) What functions should be vested in the state department of education?

2) What services should the department render to discharge these functions?

3) How best may these services be provided?" [2:ix]

While some general agreement on answers to these questions has been achieved, researchers are still seeking answers and state agency personnel are still endeavoring to respond to these basic questions.

One relevant and related question concerns the extent to which local control of education should be curtailed in favor of state control. More generally, what should be the relationship between state and local education agencies? A superficial reading of the literature might lead one to conclude that local control was being eroded by the expanding services of state education agencies. A closer look indicates, however, that the growth is in the area of state leadership and service, an area which heretofore had not received proper attention, and that local control is not being diminished as a result.

Some problems confronting state education agencies are discussed by Sroufe (3). He underscores the fact that state education agencies are not in every instance as effective as their multiple activities might seem to suggest. This he attributes to four main constraints:

1. Inadequate financial support,

2. Lack of agreement on how to achieve maximum impact,

3. Need for qualified personnel, and

4. Organizational inertia.

Morphet, Johns, and Reller (14) cite an additional problem, namely, a hesitancy to support strong state leadership in education. And still another potential SEA problem is overextending--taking on tasks which could appropriately be handled by another agency.

In discussing the emerging role of state education agencies, Sroufe and Campbell (3) identify certain new conditions out of which they expect that new roles for the agencies will emerge. These new conditions include greater expectations for education, demand for more rational decision making, the increased role of the federal government, the establishment of regional laboratories, the emergence of the Education Commission of the States, and the urbanization of society.

THE ROLE OF STATE EDUCATION AGENCIES APPLIED TO TEACHER EDUCATION

Teacher education represents one of the areas in which the SEA functions are performed. It is, in fact, a major concern since personnel represents the most costly element in a typical program of formal education. Normally, the personnel cost exceeds 75 percent of the total program cost. And in addition to being the most costly element, the personnel element is the most difficult, from a management standpoint, to control.

Generally speaking, the SEA's regulatory role in teacher education includes prescribing and administering minimum standards for selecting and training educational personnel. The SEA leadership role is to assist local school districts and other agencies in a) identifying competencies which appear to contribute to pupil learning, b) identifying training and evaluation procedures, and c) obtaining resources to implement the necessary training programs. SEA operational activities in the area of teacher education are normally restricted to those which no other agency is prepared to carry out.

Internal Influences on SEA Role

The major internal influences on the SEA role in teacher education come from the persons responsible for carrying out that role--the chief state school officers and the directors of teacher education and certification.

Chief state school officers. In 1954, the Council of Chief State School Officers published *Responsibilities of State Departments of Education for Teacher Education* (5). Of all the literature reviewed, this document addresses itself more directly to the question of the present paper, namely, What should be the role of state education agencies in improving teacher education? The council specifies three roles:

1. Improvement of institutional programs of preservice teacher education,
2. Improvement of provisions for in-service teacher education, and
3. Encouragement of the recruitment and retention of an adequate supply of teachers.

Under preservice education, it recommends that the state education agency assume the leadership in planning an effective statewide program of teacher education. However, this planning should be carried out with continual participation of all concerned groups. It notes also that teacher education planning should not occur in isolation but should consider the relationships of teacher education with other aspects of public education.

The council sees research as a necessary component of state leadership in teacher education. The council also endorses the consultative function as a necessary element of SEA leadership in teacher education. This function involves providing specific information, technical assistance, directional leadership, and encouragement. Consultants can be secured from both within and outside the state.

It is recommended that the SEA serve as the coordinating agency for colleges and universities as they develop, improve, and evaluate their teacher preparation programs. One aspect of this coordinating function is guidance, which helps institutions respond to the teacher supply-and-demand situation and to special needs of the schools.

The report also contains a section on in-service education. It recommends that the state education agency coordinate efforts of all groups interested in in-service teacher education. The report places a special priority on the role of the SEA in developing in-service education programs to train personnel for leadership responsibilities in education.

The report charges SEAs to promote the use of national accreditation in their states. It recommends that the SEA work with interested agencies in developing a selective recruitment program. It also recommends that the SEA exercise leadership in finding the necessary financial support to aid able but needy students. Finally, on the subject of teacher certification, it recommends that teacher certification be used as a means for improving standards in the teaching profession.

The Council of Chief State School Officers issued an updated position statement in 1968 (7). However, the teacher education portion of this statement does not differ significantly from the council's earlier statements. In the in-service education area, the 1968 statement adds members of boards of education to the list of persons about whom the state education agency should be concerned as it promotes in-service education. In certification, the 1968 statement makes the special point of recommending the elimination of highly specific requirements for teacher certification in favor of requirements that are more general.

Professional personnel in teacher education and certification. Significant variations have existed and continue to exist among the approaches to teacher education and certification adopted by the several state education agencies. Frinks (9) has found that seven states are currently using a credit-course approach to certification, forty-two states are using an approved-program approach, and one state is using a performance-based approach. Twenty-three states currently using an approved-program approach anticipate moving toward performance-based certification.

The National Association of State Directors of Teacher Education and Certification (NASDTEC) has published a set of *Proposed Standards for State Approval of Teacher Education* (15). This document asserts that the accreditation or approval process is a significant teacher education function of the state education agency. It recommends that the state agency make use of advisory groups, base approval on specified criteria, and utilize visiting teams in the accreditation process. It recommends that *Proposed Standards* serve as the basis for accreditation.

Teacher Certification and Teacher Education Program Approval

Up to now, the power of state education agencies to influence teacher education has been an outgrowth of their certification authority.

Appropriate jurisdiction for certification. Both the Council of Chief State School Officers and NASDTEC assert that certification is properly a state function. However, some writers advocate changes which would either limit or modify the role of the state education agency in teacher certification. The views of these writers (12,13,16,17,19) can be summarized as follows:

1. Each state should have complete autonomy in issuing teacher certificates;
2. Each state should have full authority in determining whether or not candidates are eligible to receive certificates, but the types and classes of certificates available should be determined by a national authority;

3. The certificates issued by each state should be restricted to those representing minimum standards, while an extralegal agency should issue certificates which recognize higher levels of competence;

4. The responsibility for determining teacher competence rests with an external agency (presumably the organized teaching profession or local education authorities); the state should issue certificates to persons certified as competent by the external agency; and

5. The state education agency should be given no authority for issuing certificates or approving teacher education programs.

Standards for teacher certification and teacher education program approval. There has been a good deal written regarding types of standards for teacher certification and teacher education program approval. In reviewing the literature, it is possible to consider at least three different dimensions along which standards can be analyzed: a) the input-process-output dimension, b) the level of specificity, and c) the program content dimension. The present paper deals with only the first two of these, the third being outside its scope.

The Input-process-product dimension. What should be regulated? is the major question relative to the regulatory role of the state education agency in teacher education. Should the state seek to assure that the programs in which teachers are trained have the desirable prerequisite conditions (i.e., inputs)? Should the state seek to assure that the training processes to which teachers and teaching candidates are subjected have certain desirable characteristics? Or should the state focus on the competencies or other characteristics which teachers are expected to possess and not be concerned about the manner in which those competencies are developed?

The trend, from the beginning of certification in the nineteenth century to the 1970s, appears to be as follows:

- Product standards (early use of examinations in the elementary subject fields) to
- Process standards (certification on the basis of college credits completed) to
- Input standards (accreditation approach using traditional accreditation practices) to
- Process standards (accreditation approach emphasizing "qualitative" standards) to
- Product standards (performance-based teacher education movement).

The last 20 years have been a period of experimentation with both process standards and product standards in regulating teacher education and certification, without abandoning the input standards which characterize traditional academic accreditation.

To many, product standards seem to be the answer. This seems ironic since it brings the teacher certification movement full circle to where it began. Moreover, the current product standards movement is not free from the problems which beset the original teacher examinations and led to their abandonment.

One issue in regard to product standards is the aspect of the product which should be measured. Schalock (18) offers three options: measuring the knowledge which has been mastered (the traditional practice), measuring the teaching performance, and assessing the effects the teacher has on pupils. The product standards now in use in teacher certification and teacher education program approval primarily measure knowledge--the traditional practice in Schalock's classification.

Specificity of standards. It is obvious that a strong interactive relationship exists between the specificity dimension and the input-process-product dimension. In general, specificity has been advocated when standards focus principally on input variables; flexibility (i.e., lack of specificity) is encouraged when process standards are used; and specificity is desired when product standards are used.

Generally speaking, there are three strands of literature which relate to specificity of standards. One is the reciprocity writings emanating from the pens of those wishing to facilitate the movement of teachers across state lines. A second grew out of the teacher education study by Conant (4) and includes those in New York State who set out to implement the Conant ideas. The third strand can be found in the performance-based or competency-based teacher education movement currently developing.

The following points can be made in summarizing the literature related to specificity of standards. In the first strand of literature, flexibility (i.e., lack of specificity) has been advocated as an aid to reciprocity. However, it is standardization, not flexibility, that makes reciprocity possible. Nevertheless, it may be less difficult to achieve "standardization of flexibility." In the second strand of literature, Conant advocates restricting state standards to those applicable to practice teaching programs. He wants university faculties to have a great deal of flexibility in developing teacher education programs. Experience in New York State indicates that such flexibility is not harmful. In the third strand of literature, it is recognized that the performance-based movement requires specificity in standards. However, the literature does not stipulate the level at which the specific standards must be applied.

Regulation of in-service education. There are two ways that in-service education has been integrated into the traditional regulatory role. One relates to requirements for renewing or extending teaching certificates; the other relates to qualifying for higher or advanced levels of certification.

Nevertheless, it can be expected that as new types of in-service programs are developed, new types of regulatory procedures will be required (if regulation remains the general strategy). An example of one new approach is the application of program approval procedures in noncredit, nonuniversity-based in-service education programs. .

Literature on the SEA Leadership Role in Teacher Education

USOE-sponsored conferences. Three conferences sponsored by the U.S. Office of Education resulted in publications concerned with the SEA leadership role in teacher education.

The Seattle conference. This conference, held in 1967, dealt directly with the topic "The Role of the State Department of Education in Teacher Education." The report of the conference, among other things, emphasizes the importance of in-service education. The overriding themes of the conference were three: a) state education agencies should go resolutely about improving teacher education, b) certification or other regulatory activities are not likely to accomplish this, and c) state education agencies should establish working partnerships with higher education institutions and local school districts to improve teacher education.

The Baltimore conference. A USOE-sponsored national conference on the role of the state education agency in the development of innovative programs in student teaching was held in Baltimore in 1968. In the final chapter of the report (8), the following conclusions related to the SEA role are drawn:

1. State support in money, personnel, and commitment must be given to both schools and colleges. A state support formula will need to be worked out so that schools which engage in teacher education can afford to assign personnel and time to the teacher training program.

2. State planning and standards for practicum experiences must be worked out by the agencies and institutions which have responsibility for teacher education. Such planning should include a specification of the commitments required by schools and colleges.

The Miami conference. In 1970, a conference on performance-based certification of school personnel was held in Miami Beach.

The Multi-State Teacher Education Project (M-Step). From 1966 to 1969, the U.S. Office of Education supported a seven-state project to strengthen the capabilities of the state education agencies for exercising leadership in teacher education. A major concern was the development of joint responsibilities for professional laboratory experience. A number of publications resulted from the project.

Within the M-Step experience, one can find almost a full spectrum of state roles in improving teacher education. The missing portion of the spectrum is the regulatory activities which are widely treated in other literature. The state education agency activities under M-Step include the following:

1. Activating or stimulating statewide and regional committees concerned with teacher education--this includes both existing committees (such as state teacher education advisory councils) and ad hoc committees established for a given purpose;
2. Advising or consulting with institutions or agencies attempting new approaches to teacher education;
3. Systematically analyzing policies, practices, and results, which leads to the formulation of alternative proposals;
4. Collecting and disseminating information and materials produced by other projects or agencies both inside and outside the state;
5. Producing materials (both video materials and printed materials);
6. Providing financial support for projects conducted by local school districts or higher institutions; and
7. Serving as a full participant in an operational project for demonstrating a new approach to teacher education.

Joint Committee on State Responsibility for Student Teaching. The committee issued two reports, *Who's in Charge Here?* in 1966 (11) and *A New Order in Student Teaching* in 1967 (10). To summarize both volumes, the following points relating to state education agencies can be made. The joint committee sees need for a broad-based coordinating agency which can relate to both public schools and higher institutions. The need for relating to public schools is particularly important. Hence, the state education agency is recommended. The committee also sees the need for establishing uniform practices. This implies regulation. Such regulations would possibly be administered by the state education agency but would be developed as a result of broad participation of persons with responsibilities for professional laboratory experiences. The committee also sees a need for central coordination which could be performed by the state education agency. Finally, the committee sees a need for additional financial support which might be obtained through the public school finance mechanisms administered by the state education agency.

THREE CASE STUDIES

Eleven states participated in the 1970 "Miami Training Session on Performance-Based Teacher Certification." Each of these states represents a useful case; however, the writers of this report found information on Florida, New York, and Washington to be most accessible.

It should be noted that this is not the first attempt to compare teacher education leadership activities in these three states. Andrews has written a paper "Competency-Based Certification" (1), in which he discusses current activities in Florida, New York, and Washington as they relate to competency-based teacher certification.

The Andrews Paper

One of the major observations of this paper is that Washington has made a major effort to get involvement from all affected persons in the development of a new set of standards for teacher education program approval. This was a 4-year process. The standards have been adopted, and pilot projects to implement the standards are underway.

Andrews does not discuss the process by which the New York "process standards" were developed. Undoubtedly, the process did not incorporate the extensive grass roots involvement that characterized the Washington experience. Instead, the emphasis in New York was and is on testing the feasibility of the proposed standards in actual programs.

Florida is placing major emphasis on developing the technology and training the personnel within the state to implement new types of teacher education programs. Regulations or standards have not been changed.

All three states have endorsed a competency-based or performance-based approach to teacher education. They are all relying on local institutions to develop and implement programs, rather than specifying competencies at the state level. Washington and New York consider it vital to have institutional personnel, school district personnel, and professional organizational personnel represented in any group responsible for developing a teacher education program. New York adds students to this list.

Teacher Certification and Teacher Education Program Approval

In this section as well as in the section on the SEA leadership role in teacher education, additional literature is reviewed, supplementing the Andrews' analysis of the SEA role in teacher education in the three states.

Appropriate jurisdiction for certification. In the administration of certification, there is in all three states a discrepancy between the long-range policy advocated and regulations currently being implemented. Each state education agency is now operating with complete autonomy at the state level.

Standards for teacher certification and teacher education program approval. All three states are moving towards output standards.

Florida. Florida deals with teacher certification and program approval with a set of fairly traditional certification standards and program approval standards. A dual approach to certification is followed, using the course-credit approach with institutions which have not received formal approval. The procedures for administering the program approval regulations have been modified so that alternative teacher preparation practices are possible. Teacher education guidelines are being prepared to aid institutions in program development and evaluation. Also, a new set of program approval standards are under development. These standards are designed to encourage, rather than merely to permit, the development and implementation of performance-based teacher education programs.

New York. During the past few years, New York has moved from highly specific and detailed certification standards to more flexible standards. Program approval practices have changed along with the change in standards. In addition, a new set of "process standards" for program approval has been developed and is being tested. These standards are intended to promote performance-based or competency-based teacher certification.

Washington. The state of Washington has adopted flexible standards for both teacher education and teacher education program approval. These standards have been in effect for many years. Recently, the state has developed a new set of standards aimed at implementing performance-based teacher education programs. An important aspect of the standards is the stipulation for joint participation by school districts, universities, and professional organizations in program development and implementation.

Regulation on in-service education. New York and Washington treat the regulation of in-service education as part of the regulation of preservice education. As the states move toward performance-based programs, it is anticipated that there will be a much closer relationship between job assignments and in-service training. Washington has already made considerable progress in this direction. In Florida, a different strategy is being used to link job assignments with in-service education. The state has developed a program approval which is applied to in-service education programs conducted by local school districts.

Leadership Activities

The description of the M-Step project includes seven types of teacher education leadership activities which might be carried out by state education agencies. Most of these activities are now being employed by state education agencies in Florida, New York, and Washington. The remainder of the chapter describes additional leadership activities being carried out in those states.

Florida. Florida's new state leadership efforts in teacher education are aimed at developing techniques and materials for implementing performance-based teacher education, making these materials available to potential users, and providing training in the skills and knowledge required to carry out performance-based teacher education.

New York. A major element of New York's leadership strategy in teacher education is to use discretionary funds to support teacher education activities--primarily in-service--which are consistent with state priorities. Many of these activities are college based. However, they also include locally initiated in-service activities.

Washington. The state education agency in Washington carries out two major types of leadership activities in teacher education, in addition to those already discussed. These are a) securing federal or foundation funds to support pilot activities, most of which are conducted by institutions or local agencies and b) stimulating involvement through conferences, meetings, committees, and informal discussions.

Conclusion

This chapter has described the state education agencies in three different states, each moving out to bring about changes in teacher education. The SEA in New York is a large agency with a large staff in teacher education. It has been well-financed and has been able to use these funds to bring about changes in areas which it deems to be of high priority. It has recently established performance-based teacher education as a priority. It has made regulations more flexible and has initiated pilot projects to test the utility of new process standards for teacher education program approval.

Florida is a medium-sized state education agency. It makes greater use of regulations as a leadership device, as witnessed by the state in-service education program. However, it does not adopt new regulations unless capabilities for implementing those regulations are extant in the state. Thus, teacher certification regulations have not been changed, and efforts to change teacher education program approval regulations are just beginning. The state is putting its major efforts on developing the techniques and expertise needed to implement new approaches to teacher education and certification.

Washington is a less populous state with a small state education agency staff in teacher education and certification. The personnel on that staff avoid the regulatory role as much as possible. Standards are extremely flexible. The emphasis is on stimulating participation and involvement of all constituent groups. At the same time, the agency makes every effort to secure financial support which will assist the constituent groups in their efforts.

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An abstract of "Variables Affecting
Change in Inservice Teacher Education,"
by Paul W. Devore

SUMMARY

Herein are discussed the various types of in-service programs and some assumptions underlying current practice in the field of in-service teacher education; the state of the art of in-service teacher education; selected organizational approaches to changing in-service teacher education; selected variables involved in in-service teacher education; the change process itself, including resistance to change and aspects of the change process such as communication, conditions necessary for learning and change, environmental factors, change agents, and facilitators and inhibitors of change; the role of evaluation in the change process; and important variables in changing in-service teacher education, including recommendations to the USOE for action.

ERIC DESCRIPTORS

*Change Agents
*Communications
*Educational Change
*Environmental Influences
*Inservice Teacher Education
Evaluation

THE TASK

What variables appear important in changing traditional in-service training procedures?

INTRODUCTION

The interrelationship between education and social change is striking and places in-service educational programs in perspective. When a society is in a stage of rapid and constant change, education is conceived as a factor of change and challenge, and the critical variable in the change process is the teacher. If educational programs are to be changed, then the personnel of the system must be changed. If education is to serve the constantly changing social milieu, we must realize the problem is social and psychological in nature and of significant consequences.

Unfortunately, as Goodlad (10) reminds us, education is probably the only large-scale enterprise that does not provide for the systematic updating of the skills and abilities of its employees. Teachers are generally on their own in updating their skills, with little in their preservice background to prepare them for continual learning and growth.

When in-service programs are offered, they are generally designed by administrators. Interpretation of the research findings by O'Hanlon (14) and others suggests that teachers find most programs inadequate for their needs.

Preservice education, regardless of quality or length, no longer suffices in view of the radical changes which have been and will probably continue to intervene.

One conclusion reached in the review of literature concerning in-service teacher education and change is that the variables involved concern the behavior of individuals in a social-psychological environment. A second conclusion reached concerns the change process. The variables related to the altering traditional in-service teacher education programs are the same or similar to those of any other social organization that engages in change. Therefore, the body of literature to which many leading educational change agents refer are those studies in strategies of change and the change process itself.

Types of In-service Programs

The literature seems to support the probability that there are as many approaches to in-service teacher education as there are individuals involved in preparing and offering in-service work. With few exceptions, the validity of type and procedure has not been researched. Most in-service programs are not based on a total educational philosophy. Most, in fact, originate from the administrative suite and are not concerned with the operational mode of the educational enterprise.

Most reports on in-service programs cite the negative response of teachers. Several reasons are given for this kind of reaction.

1. Inappropriate activities--selected without regard for purposes to be achieved;

2. Inappropriate purposes--a failure to relate in-service programs to the genuine needs of staff participants; and

3. Lack of skills among program planners and directors who design and conduct instructional improvement efforts.

Typical of the type of in-service activities planned by a central source and dependent on the initiative of the teacher in attaining an improvement in instruction are the following:

- One-week orientation periods prior to the opening of school
- Summer workshops
- The building of a professional library
- Regularly scheduled faculty meetings
- Teacher committees on curriculum development
- Community surveys
- Faculty committees studying school problems
- Teachers visiting classes of other teachers
- Special induction programs for new teachers
- Small study-groups working on curriculum

The type of in-service program offered will depend to a large extent on where it originates. This becomes a critical variable in changing traditional in-service teacher education.

Current Practice--Assumptions

One basic assumption stressed by numerous researchers in the field of change and in-service teacher education is that the processes of in-service education are fundamental to producing change in education. In addition, Edmonds and others (7) believe that the significant element is "personal growth" on the part of those involved in the educational process.

Why in-service programs do not change and why they do not provide change can be understood when one reviews some of the assumptions people hold about change. Lavisky reviewed these and found that

> 1. . . . people contend that a good product or a good idea will succeed on its own merits . . . that if a research report shows a better way of reaching an educational objective, that teachers will automatically tread the new path. Experience shows otherwise. . . .

2. . . . people believe change is linear in nature. . . . Change is not linear. . . .

3. . . . the belief that when someone is successful in getting an educational innovation adopted the job is complete--that no further action is required. [12:3-5]

Change

The question of the present literature search is to identify those variables which affect change or innovation in in-service education, both positively and negatively. As Geis (8) notes, the record is bleak.

An interesting observation by Geis is that the process of change in education "was, for the most part, a linear system; changes began in Schools of Education, in curriculum development projects or in special demonstration programs and flowed to the school" (8:3). Studies of change, innovation, and invention have, however, stated emphatically that change and innovation do not occur in a linear mode. The problem seems to be that educators think and plan in linear modes. When programs fail to produce change, most program planners shift to another plan without determining why change did not take place.

STATE OF THE ART

During the last decade or so, much effort has been expended to determine the best procedures for in-service teacher education. This research effort has been supported almost totally by the U.S. Office of Education.

Most research studies on in-service teacher education conclude that when changes occur they are the result of a continuing program of training. Amidon discovered that "opportunities for applying new insights immediately in the classroom and for obtaining feedback about one's behavior were found to be helpful" (1:261).

Rubin has found that although "teachers are more effective when they have alternative strategies with which to teach a given lesson, *each of these strategies must be acquired systematically and each must be perfected through cumulative practice*" (17:13).

Perloff reports "that it is probably unrealistic, and perhaps even unfair, to expect programs of the length, scope and nature of summer institutes to make sweeping, radical and immediate changes in the participants' knowledge, attitudes, and teaching practices" (15:81). Other research reports the necessity of involving the entire school when teaching practices are altered. Perloff identifies several additional variables which, according to her, are applicable to all educational development. In summary, they are a) training programs must always be sensitive to the interests and needs of the participants; b) training programs should be relevant to a major and significant part of what the participants themselves teach; and c) the training should be practical in orientation.

Flanders has found that learning new ideas about teaching evokes emotional reactions and shifts in attitudes. A program which recognizes this factor, plans for it, and permits changes within the program to accomodate these elements will be more likely to produce desired changes in teacher behavior. Other research provides evidence that in-service programs which are holistic and school based with total staff involvement are most effective.

One variable noted throughout the literature on in-service teacher education, particularly in programs with evaluation as a strong component, is the finding that the more precisely a training objective is stated, the greater the probability the program will succeed.

In general, it can be concluded that most in-service education is at best loosely structured, without specific goals, and operated on experience rather than research. Evaluation and assessment play only minor roles in the typical in-service offering. The individual differences which educators discuss so frequently are ordinarily ignored in the design of in-service programs.

SELECTED APPROACHES--ORGANIZATION

One conclusion can be stated with considerable finality: if it is desirable to change traditional in-service teacher education programs, the organizational structures must be altered to promote the proposed changes. Introducing new programs into old organizational structures interjects the element of failure from the beginning.

How are in-service programs organized and what effect does organizational structure have upon programs, goals, and the improvement of instruction? Asher (2) classified in-service programs into three categories in his review: a) the centralized approach, b) the decentralized approach, and c) the centrally coordinated approach. There are many variations, of course, to these gross categories.

The research on in-service teacher education supports Asher's conclusion that in "the centralized approach, the central office dominates the in-service activities and gives little attention to the psychology of change, thereby ignoring a body of research which suggests that individuals are more likely to change when they work on problems significant to them and when they share in the problem-solving decision" (2:13).

When the decentralized approach was used, Asher reports that changes as the result of in-service programs included new guides and courses in subject areas; improved services to students; better student achievement; revised reporting systems; and improved practices in teaching, grouping, and long-range planning. However, what is needed is a concern for the whole as well as the parts.

SELECTED VARIABLES

In-service programs can focus on any single part of the educational enterprise or they can involve entire cities. In small districts, the necessity for an "outside force" as a catalyst for change is vital.

Almost all research reports stress the function of evaluation in promoting planned change. This is probably one of the key variables. Although evaluation is an important tool in the change process, it is seldom utilized except in a superficial fashion. Reports in the literature state that the issue many times is one of personnel: the expertise is lacking. Related to this factor is the failure to build evaluation into the project or program as an integral phase of the total operation.

There are other significant variables. For example, the design and format of in-service programs affect the change process. Another pertains to the question of whether teachers will gain as much from an in-service program in a local setting as from a similar one on a college campus. Throughout the literature on in-service education and change, the involvement of the individual, together with freedom of choice, also seems to be significant.

Correlated with the volunteer or freedom-of-choice element are criteria utilized by researchers and in-service workers in the selection of schools. The basic principle of operation is to start the in-service or change program when and where the attitude towards change is positive, among both teachers and administrators.

Finally, the question of teacher preparation is evidently a factor related to change.

THE CHANGE PROCESS--BACKGROUND

One fundamental conclusion reached during this review of literature is that the education profession, as a whole, has very little insight into the process of change.

The goal is not just any change, but systematic, progressive, cumulative change which results in progress toward attaining better and better systems of instruction. A term discussed earlier, namely, "innovation," best fits this description.

Many disciplines are concerned with change and the change process. However, it is generally agreed that an inclusive model of the change process or a general theory of change does not exist.

Many in-service teacher education programs operate with the same myths about change that laypeople hold. McClelland (13) discusses these in terms of three propositions.

Proposition 1. A good product will succeed on its own merits, or, stated differently, "Information is sufficient for change."

Proposition 2. The introduction of an innovation is a final act, and no further attention is required. (In fact, a plan for maintenance and feedback is obviously essential if the planned change is to persist.)

Proposition 3. There is an orderly process from research to development to use. (In fact, studies definitely reject this linear model. Innovation and change generally occur in a network fashion with much movement back and forth between research, development, and use.)

Educational change and in-service programs designed to promote change have largely ignored the information already available on change. In-service programs are still designed which attempt to obtain change and innovation through several limited and doomed-to-failure approaches. First is the type of innovation composed of materials produced outside the school and unceremoniously imposed upon it with a minimum amount of preparation, especially of the teachers. Second are demonstrational innovations. Expert teachers or advocates of a particular method or technique show teachers--often captive audiences of teachers--how to perform. The method is ready-made and imposed upon the system. Finally guaranteed to fail is "innovation by expertise." Specially trained people are made available. Audiovisual experts, curriculum experts, and other specialists are placed next to or occasionally in the school.

Resistance to Change

It is a rather widely held opinion that teachers, many of whom are characterized by their submission to authority, formalism, and rigid and stereotyped thinking, are also hostile to educational change or to everything that seems to them unusual. Research into change does not substantiate this point of view. Some individuals accept change, some reject it. The question is why some people accept change and others reject it. Factors such as indifference, negativism, resistance, lack of interest, complacency, or inertia have been singled out as limiting efforts at growth through in-service techniques.

Moreover, there is apparently a psychological equilibrium which each individual attempts to maintain unless the benefits of his present state are less than satisfactory from his frame of reference. Unless there is dissidence within his environment, the individual will elect to maintain his present state. When the teacher's world is invaded by outsiders mandating change, teachers may feel insecure and threatened. However, Geis (8) maintains that the threat is selective and that there can be new roles for the teacher--new alternatives and rewards, which are not part of every change model.

There are other barriers to change which concern other factors besides individuals. For instance, Christie (5) has isolated the board's conception of community attitude towards innovation, conflict over responsibility for determining educational policy, and expenditure.

The Change Process

Change is always occurring. The question is what type and in what direction. Most educators writing about change are concerned with planned changes. Planned change and the study of change processes have made educators aware of options in programs and actions. Planned change--change directed toward agreed-upon goals in educational or other systems--involves a variety of levels of difficulty, which Chin (4) has arranged in an ascending hierarchy of a) substitution, b) alteration, c) perturbation and variations, d) restructuring, and e) value orientation. Each level has different variables.

Gillie has identified several variables which relate to educational institutions and change strategy.

1. The innovation. The innovation should be modified from its original form so it blends in with the cultural values and past experiences of those persons who are expected to make the adoption.

2. Opinion leaders. The opinion leaders must be accurately identified and won over to believing that the innovation is important to the institutions and its members.

3. Users and Adopters. The intended users of the innovation must understand clearly the nature of the innovation and appreciate the need for its incorporation.

4. Purpose of Innovation. It must be clear to the intended consumers that one of the chief underlying purposes of the innovation is to enhance the competence of the institutional members.

5. Social Consequences. The social consequences associated with the adoption of the innovation should be carefully anticipated. Social consequences that might be undesirable should be prevented or minimized by thoughtful planning. [9:14-15]

Earlier it was noted that the characteristics of the innovation itself affected change. Some of the more basic characteristics of innovations which affect change are listed from Rogers' (14) work: a) comparative advantage, b) compatibility, c) divisibility, and d) complexity.

McClelland (13) in his analysis of Niehoff's work cites the following variables related to the culture, the receptors, and the change agent: a) amount of behavioral change required, b) recipient needs, c) reward structure, d) local cultural patterns, e) communication, f) involvement, g) flexible strategies, and h) patterns of maintenance.

The Change Process--Communication

The communication factor, a significant one, becomes more of a problem, as does in-service teacher education, when Dague's observation is studied: "A major problem encountered by local school districts today is the difficulty that faculty members have in working together" (6:1). This is a problem that has received very little attention.

The Change Process--Conditions Necessary for Learning and Change

Although a number of the conditions necessary for learning and change have already been stated or implied, it seems necessary to elaborate on several and to direct attention to some new ones.

A central variable is whether or not a program makes the learning process the focus of organizational efforts designed to serve the needs and purposes of individual teachers.

Other factors, as cited by Edmonds (7), are physical environment, individual perception of others, individual perceptions of self, and functions and roles.

Moreover, the persons toward whom the in-service issue is most often directed, namely, the teachers, bring to the situation certain fixed factors which require attention if change is to accrue. Among these, reported by Flanders, are

1. The lack of a sense of experimentation with regard to their own behavior;

2. Limited skills for exploring different verbal patterns in the classroom due to a lack of concepts that deal with behavior;

3. Limited tools for gathering information systematically; and

4. Lack of time to develop, understand, and use data-gathering tools.

Flanders believes teachers need new concepts as tools for thinking about their behavior and the consequences of their behavior. They also need procedures for quantifying these concepts in practical classroom situations; practice in using these concepts in their own classrooms to analyze behavior; a research orientation attained through participation in independent, self-directed inquiry in which their own behavior and the reactions of pupils are the object of inquiry.

The Process of Change--Environmental Factors

Many writers mention environment. Few have anything to contribute except to recognize it as an important variable. The work of Bhola (3) on the subject is perhaps the most substantive.

The Change Process--Change Agents

Throughout the literature on in-service teacher education, innovation, and the change process, suggestions are made that what is required to improve the process is a person known as a "change agent." Most literature does not define the role of this person beyond recognizing that special talents and knowledge are required and that problems exist between the development of a process of innovation and the acceptance and practice. Some writers call the new role in education "professional innovator." Personnel at the county and state levels of public education largely confine their roles to regulation and neglect the advocacy of change. Those that do not engage in the change agent role usually serve intermittently or transiently.

The change agent fulfills a role within society by providing a link between the innovator and the accepter.

The Change Process--Facilitators and Inhibitors

Programs which have been successful have utilized some or all of the following practices to some degree:

1. Changing the planning of in-service programs so that it is done by teachers alone or in cooperation with administrators;
2. Relating an in-service program directly to what is going on in the classroom;
3. Involving the individual, meeting his needs through individualized instruction, and directing attention to those individuals who express interest in change;
4. Using outstanding classroom teachers to conduct in-service programs for other teachers;
5. Using feedback; and
6. Using the problem-solving approach, as Geis (8) suggests.

In addition, the field of curriculum innovation has been studied, and certain conditions have been found to facilitate the introduction of new curricula. Among these are the following:

1. People--highly intelligent with differentiated and specialized roles;
2. Reward structure--individual recognition when possible;
3. Problem--precisely defined and limited in scope;
4. Resources--physical facilities, materials, and equipment available as required and/or produced as needed;
5. Communication--personnel well-informed about similar developments elsewhere;
6. Application to Practice--curriculum tried out, altered, and improved until it meets the objectives.

There is a number of variables which can inhibit change. Gross (11) has mentioned a) staff resistance, b) the clarity of the innovation, c) individual or group ability to perform it, d) existence of necessary materials and resources, and e) the compatibility of organizational conditions with the innovation. McClelland (12) has cited a) diffuseness of the goals, b) knowledge and skill in the teaching profession to engineer innovations, c) lack of evaluation and feedback (which is related to precision in the statement of goals and objectives), d) human factors, and e) management and funding problems. Rubin's (17) research found that the school principal was by far the greatest influence on the staff's personality, and Gross attributed much of the failure schools experience in trying to adopt change to "the truncated version of the change process held by their administrators" (11:259).

EVALUATION

The most powerful tool and the most significant variable for effecting change in traditional in-service teacher education programs is the vague, difficult-to-define, complex, problem-plagued concept of evaluation. The level of sophistication in this area of education is very primitive.

Unless the philosophy of a given educational program, together with the assumptions of the program, is precisely stated, it is impossible to engage the questions of change or evaluation. Yet the present review of the literature on variables affecting change in traditional in-service teacher education programs can only conclude that the questions of the philosophy, direction, content, and purpose of education have not been answered.

Evaluation must be an ongoing, day-to-day process. This is true because "everything is in process and nothing stays still."

SUMMARY

Rather than a review of what has already been said, it seems appropriate to state in as brief a form as possible some of the more elemental observations which are judged important to the question.

Change is always occurring. The question is, what type and in what direction. Planned change is possible and is a desirable goal.

We know that present-day in-service teacher education programs produce little change which affects the quality of instruction. We know that one of the reasons is that the programs are not evaluated. And we know that programs without precisely stated objectives are next to impossible to evaluate.

We know much more about change and the change process than most educators are willing to admit. It almost appears they are reluctant to use the tools available to them for engaging the question.

We know that the variables affecting change involve diverse elements such as philosophy, people, programs, performance, places, practices, precision practitioners, and planning, to name a few.

If a decision is made by the U.S. Office of Education, a state department of education, county school system, or other political entity with direction and control over education to change in-service teacher education, *then* action devoted to the following variables is in order:

1. The formulation of precise, long-term development plans;

2. The development of specialists including managers, change agents, and evaluation specialists;

3. The establishment of programs for the study of the change process, including research and evaluation;

4. The commitment of funding sources to long-term ventures, so that the critical variables of resources and follow-up can come into play;

5. The structuring of all phases of the program so that there is direct involvement of teachers in the process;

6. The design of efforts so that the focus of attention is directed from the part to the whole; and

7. The creation of an "outside force," such as training centers, with the long-term task of improving the quality of instruction, with particular attention to the first 2 years of a teacher's tenure.

Finally, a solution to the reward structure in education must be found for personnel at all levels. This is important because in the last analysis it is people who change programs. The question is, Why should they?

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An abstract of "The Utilization
of Simulation in Teacher Preparation,"
by Roger H. Peck

SUMMARY

Herein are discussed the use of simulation in teacher preparation, including the purposes for which instructional simulation is being used, the theoretical dimensions of instructional simulations, some current simulation programs for the preservice or in-service preparation of teachers, criticism of commercial simulations. issues to be resolved in the field of simulations, the advantages of simulation, and questions in need of research; Project Insite, including an overview of the problem, the elementary teacher education program, the secondary teacher education program, the "capstone" experience, and an assessment of the simulation program in Center Project Insite; low-cost instructional simulation for teacher education, including the Classroom Management series; and the Inner-City Simulation Laboratory, including its uses, its components, the building of it, and possible uses for it.

ERIC DESCRIPTORS

*Inservice Teacher Education
*Preservice Education
*Simulation
*Teacher Education
*Teaching Methods

THE TASK

With respect to teacher training models based on simulation, what components have been shown to be successful? What procedures are most appropriate for development of these components?

INTRODUCTION

The author has limited the present report to simulations as they are presently being utilized to prepare classroom teachers, as opposed to administrators, counselors, and other professional educational personnel.

SIMULATION IN TEACHER PREPARATION: THE STATE OF THE ART

As it is referred to in this chapter, simulation is defined as "a representation of several variables in the same arrangement as they occur in a particular natural or artificial system. Once such arrangements or conditions are established, the resultant display can be seen as a model of reality which may be amendable to interaction and manipulation" (4:1; 1:2).

Purposes of Instructional Simulation

Four uses for instructional simulation presently being employed have been identified.

1. To make the content of instruction more relevant to the student teacher by involving him in a decision-making situation, in which he uses skills and knowledge that would not normally be applicable until his first teaching situation;

2. To wed theory to practice, with a purpose similar in many respects to the previous one;

3. To modify behavior; and

4. To teach principles, procedures, criteria, or other higher cognitive-level areas, with the purpose of improving problem solving and decision making (probably the greatest number of simulation programs do this).

Theoretical Dimensions of Instructional Simulations

Cruickshank and Broadbent (4) have discovered that existing instructional simulations can be understood in terms of a theoretical three-dimensional cube with scope, mode, and model as the dimensions.

Current Simulation Programs

The largest number of simulations in professional education concern the preparation of teachers. Classroom simulations and low-cost simulations are two examples of the latter. Another is the Teaching Problems Laboratory, the first of a group of media-ascendent role simulations with a background model. It was intended to give student teachers a chance to make decisions in a lifelike classroom environment. A fictitious school district called "Madison" was created. Each participant, assuming the role of Pat Taylor, a first-year, fifth-grade teacher, was introduced to the community, the school district, and the school by means of two filmstrips. Then 31 teaching problems were, in the course of time, presented to the participants. The participants' written solutions to these problems formed a basis for discussion of the problems. Single "correct" answers were not sought.

Other examples of teacher training simulations are found in the Inner-City Simulation Laboratory and Problems of Faculty Desegregated Schools, similar in approach to the Teaching Problems Laboratory; Project Insite (described in detail later in the report); the Model Elementary Teacher Education Program (Teachers College), which uses a teaching game and a simulated school; and Simulation Exercises for secondary teacher education by Swan and Johnson (7), a scaled-down version of a role simulation (no background model is developed).

Criticism of Commercial Simulations

It appears that most of the criticisms of commercially available simulations are similar to those once leveled against programmed learning. Objectives are either not given or are vague. Minimum and maximum entry levels for participants are not specified, nor is research on the effectiveness of the simulation available. Two of the greatest deterrents to the use of commercial materials are lack of proper training of the instructor and lack of a clear presentation of how the simulation should be integrated with the rest of the program.

Issues to be Resolved

These issues may be subsumed within four overlapping categories: developmental, administrative, instructional, and evaluative.

Development of the simulation. Several issues concerning the design and development of successful simulations have to be resolved. These issues center around the object of simulation, its scope, the quality of the system employed, game quality, feedback, realism, and content-process.

Twelker (8) has outlined 13 steps to be taken in designing simulation systems. One can get a general idea of the complexity of this process from looking at these steps:

1. Define the instructional problem,
2. Describe the operational educational system,
3. Relate the operational system to the problem,
4. Specify objectives in behavioral terms,
5. Generate criterion measures,

6. Determine the appropriateness of simulation,
7. Determine type of simulation required,
8. Develop specifications for simulation experience,
9. Develop simulation system prototype,
10. Try out simulation system prototype,
11. Modify the simulation system prototype,
12. Conduct field trial, and
13. Make further modifications to the system deemed appropriate from field trial experience.

Administration of simulation. This is a second broad category of identified problems facing administrators of simulation programs. Included here are placement of simulation in training programs, practice, group size, and length of simulation.

The simulation instructor. In general, most developers of instructional simulations seem to view the director as a facilitator of learning. The role of the director appears to be significant and needs investigation. It was found that in research on classroom simulation at the Teaching Research Division of the Oregon State System of Higher Education more variance was contributed by instructor differences than by treatment variables.

Evaluation of simulation. A final set of issues relates to the evaluator's role in simulation. The issues here involved include specificity of simulation outcomes, objectivity or subjectivity in evaluating performance, and transfer of training.

Advantages of Simulation

Cruickshank and Broadbent (4) have found that simulations are relevant, safe, economical, and psychologically engaging; they permit the trainee to be himself; they permit control and the wedding of theory and practice; and they promote knowledge of and skill in group dynamics.

Questions in Need of Research

Cruickshank and Broadbent (3) suggest the following questions for further research: Do persons react under simulated conditions in the same way as in real life? Are simulators useful for prediction? What is learned during a simulation? What can be done to increase feedback capabilities? and What effect does simulation training have on subsequent consequences?

THREE SIMULATION PROGRAMS

The remainder of this report is devoted to three simulation programs recently used in teacher preparation programs.

Project Insite

Project Insite was a 6-year teacher education project at Indiana University. The program was funded by a Ford Foundation grant that amounted to almost a million dollars. The grant began in July 1963 and terminated in June 1969. The project involved an accelerated and innovative program for elementary and secondary teachers.

From the beginning, the project made two major guarantees: a) a resident teaching experience and b) both the Bachelor of Science and the Master of Science degrees in 4 academic years. The students participating in Project Insite enjoyed a special program which carried them through an undergraduate and graduate program with four special characteristics:

1. The combination of several sets of related courses into "blocks" or "seminars" or "workshops";

2. The "acroclinical" semester, utilizing educational theory, simulation, observation, participation, methods instruction, and student teaching in a synthesized or integrated experience;

3. A resident teaching experience for one semester in the fourth academic year; and

4. A final graduate semester including a Professional Studies Package to complete degree requirements.

Of special interest to the present report are the activities involved in one of the components of the 4-year program: the acroclinical semester. During this semester, a program was structured which required the full time of the students throughout the semester. The program was conducted in the environment of the University Elementary School; the Insite faculty even moved into the offices and classrooms of this school. The goal of the acroclinical semester was correlation and interrelation between instruction in professional methodology and the psychology of learning and student teaching, in the hope of closing the wide gap between theory and practice. The major thrust for the use of the simulation materials for both the elementary and secondary programs was found in the acroclinical semester.

Due to the somewhat different utilization of simulation in the elementary and secondary programs, these programs are treated separately in this report.

The elementary teacher education program. Among the innovations here were a) seminar courses designed to demonstrate the interrelatedness of disciplines within each of the three major fields of study and to provide students with an opportunity to see how scholars actually deal with problems; b) a creative arts workshop; c) a course in human growth and learning intended to provide the backdrop against which observation, interpretation, and analysis could be made of teaching-learning situations; and d) the acroclinical semester.

The acroclinical semester, combining methods, principles of education, and student teaching, placed the student into an integrated experience for the entire time of one full semester. In addition to methods and student teaching, a multifaceted, flexible program was devised which included use of a simulation package, major topic presentations, videotaped teaching, focus on instructional media, and a program of standardized testing in the elementary school.

The use of simulation in the acroclinical semester. The program of the acroclinical semester was formally initiated through simulation. A full week of instruction was devoted to a study and analysis of a simulated community and its schools. At this juncture, simulation provided a common reference point for elementary majors as they began their professional study and analysis of teaching.

The rationale of simulation as it was used in the elementary program. Through simulation it was anticipated that college students in this preparatory stage would develop the following sensitivities and awarenesses:

1. Greater sensitivity to the varying roles that elementary teachers must play and to the demands made on them;

2. Greater sensitivity to the tremendous importance of knowledge and understandng of the needs of the pupils to be taught;

3. Awareness of the ways in which communities and schools differ in terms of philosophy, policy, and modes of operation; and

4. Awareness of the importance of the climate and atmosphere which teachers develop in their classrooms.

All the materials that were gathered for the simulated school were gathered to serve one prime objective: to force the student to take action upon a critical situation occurring in the environment of the school and/or classroom.

Materials produced for the simulation. For production purposes, two schools and two classrooms were selected. In each school setting, films, slides, and audio tapes were produced that showed all the aspects of daily school life.

Material used directly as it came from the school. Besides the materials which actually involved production, a great many materials were simply reproduced out of the school's files, including reports, texts, themes, routine assignments of various types, and communications from parents and administrators.

The secondary teacher education program. There were some similarities in the use of simulation within the secondary and elementary portions of the Insite program. On the other hand, there were some major differences. These similarities and differences are described in the following sections.

The secondary acroclinical semester. The secondary acroclinical semester combined student teaching, methods, and principles of secondary education into one 16-week semester. Five major subject areas were represented: English, science, mathematics, social studies, and modern foreign languages.

The instructional pattern for the acroclinical semester was divided into four phases, each 4 weeks long. Phase 1 was designed to teach the student to observe classroom instruction effectively and to plan a lesson or unit of instruction in keeping with stated goals and objectives. During phase 2, the student moved from observation to a more active role in the classroom in which he participated, assisted, and taught on a limited scale. Student teaching itself was the main activity during the third phase. Finally, although the student continued to teach during a large portion of phase 4, he returned to classes on special methods and principles for further work on evaluation of student performance and--after a sampling of the teacher's life--a close look at the profession itself. During the last week of the semester, the secondary students participated in the "capstone" experience, during which the students dealt with some of the problems facing the beginning teacher.

The capstone experience. The capstone was a summarizing, a testing. It had the student play the role of a beginning teacher in contrast to the role of a student teacher.

Simulation experiences in the introductory phase. In this program, as opposed to the elementary program (in which the simulated experiences in the introductory phase are based on a specific situation in a specific real-life school), the simulated experiences in the introductory phase are based on hypothetical situations that might occur in any school.

Limitations in the use of the capstone simulation package. With secondary teachers there appears to be a built-in difficulty in using materials which provide for a simulated introduction to a teaching job in a particular community. This difficulty stems from the fact that a secondary teacher is going to be primarily concerned with one subject area. Consequently, the activities, problems, and experiences one wishes to simulate have to be of a nature that all secondary teachers would find of importance. The major categories included in the material just described are essentially of this nature. They deal with a) selecting a community in which to teach, b) analyzing the secondary schools in that community to see if they would be an appropriate place for the individual, c) identifying factors concerning the beginning teacher which are deemed important by administrators in the school district, d) dealing with parents concerning the curriculum, e) working with students who are not active in school, f) developing a rationale for one's choice of teacher organizations, and g) making decisions in the case of serious student misconduct. These are all meaningful topics for the prospective teacher, but they do not necessarily add up to a realistic teaching assignment in the school.

It appears that what is needed to make this sort of package more effective is to develop tasks within each of the major subject areas appropriate to the teaching of that subject in the given school district. But even once this is done the teacher training institution faces the problem of scheduling and conducting all of these various sections. Mcquigg states a very important factor:

> The teacher training institution hoping to develop a simulated teaching experience for the prospective teacher must be prepared to deal with the school community in considerable depth. A cursory look at the community, using a few photographs and perhaps some written material, does not provide the information about the community necessary for making good decisions. This kind of depth takes a great length of time, not only to develop or collect simulation materials within the community itself, but also to present them to the college class. [6:10]

Assessment of the simulation program in Center Project Insite. The Insite staff made the following recommendations:

> For those educators who are interested in developing a simulated program of their own, there are only two major suggestions. The first would relate to the matter of allowing for ample development activity prior to the actual use of the simulated materials. The correlation between careful planning-development and successful implementation is, of course, very high.
>
> The second point relates to the fact that in the initial exploratory sessions, when plans are being made for the production and collection of materials, it is advisable to collect as much material as is possible within budget limitations. As was indicated previously, preparation of audio tapes and slides, and reproduction of materials, is not a particularly expensive proposition. Ample materials of this type should be produced and appropriate reproductions made. In the long run, both time and money will be saved. The matter of filming is entirely different because quite obviously much greater expense is involved. [5:46]

Low-Cost Instructional Simulation for Teacher Education

Two sets of low-cost instructional simulation materials for use in teacher education programs have been developed at Oregon State System of Higher Education, Monmouth, Teaching Research Division. One of the sets of materials deals with problems of classroom management and the other deals with discovery teaching. The new low-cost simulation packages serve teacher education institutions that are faced with the problem of providing practical experiences for student teachers. They have been designed to solve the growing problem of placing students in schools without interfering with the ongoing program of education for the classes or groups being observed.

Originally based more on the operant conditioning model, the low-cost simulation materials provide a different opportunity for the student than the materials used in Project Insite. A second difference appears to be in the fact that the low-cost materials were designed to allow the supervisor to be in the situation with each individual student, pointing out important behaviors and features of instructional practices. A third apparent difference is that the low-cost materials were not necessarily designed as an integral part of a specific teacher training program.

The following section presents a description of the Classroom Management series, one of the two sets of low-cost simulation instructional materials which were developed.

The Classroom Management Series

This description is divided into two major areas: purpose of training and modes of training.

Purpose of training. The purpose of training in the Classroom Management series is related to content, audience, and objectives.

Content. The Classroom Management series teaches and exercises the student in two widely applicable teaching principles. Principle 1: "If an activity is about to begin where standards of social behavior have either not been established or have not been previously followed, and the teacher desires to achieve specified management outcomes, then the teacher should use a social standard establishment strategy" (9:B-3). Principle 2: "If in an ongoing activity a child, or children, behave in a way which violates the management outcomes, and the teacher decides to attain the management outcomes, then the teacher should use a desist strategy which will attain the management outcome with the least possible disruption of the instructional objectives" (9:B-3).

The audience. The Classroom Management series was designed specifically for college students entering a teacher preparation program for their first time.

The objectives. Ideally, after training, the student would be expected to exhibit behaviors in the classroom that are consistent with the two principles taught.

Given a number of novel, filmed episodes that represent problematic classroom situations, the student will use a desist strategy that attains stated management objectives with the least possible disruption of the instructional objectives.

Given a verbal statement about a classroom situation that involves a new activity, or one in which social standards have not been previously established, and given an accompanying film of the class, the student will use a social standard establishment strategy.

Modes of training. The instructional system is divided into two parts or phases. Phase 1 introduces students to the training and teaches the two principles of classroom management to them. Phase 2 exercises the student in the application of these principles and provides an opportunity for the student to evaluate his learning.

Phase 1. The Phase 1 instructional program uses an integrated set of materials, including a student manual and a film-tape presentation. The film-tape presents a series of classroom episodes to illustrate the principles and concepts being taught. The program is divided into five parts.

1. The three major roles of the classroom teacher are presented: instructor, classroom manager, and therapist;

2. Techniques of preparing children for a new activity or for an activity in which their social behavior has not been previously satisfactory are presented;

3 and 4. Various teacher strategies for dealing with disruptions in the instructional program are given; and

5. Review.

Generally, three modes may be used in Phase 1 training: the conventional classroom instructional mode, self-instruction, and the small-group instructional mode.

Phase 2. The Phase 2 instructional program uses motion pictures integrated with an orientation booklet and student manual. The motion pictures are used to present simulation episodes, filmed from the point of view of the student, to which he can react. Both programs are supplemented by either small-group discussion or student-instructor (tutor) discussion either during or after the formal training session.

The instructional program for Phase 2 consists of three parts.

1. Orientation: Students have an opportunity to "meet" the children in the simulated class and also learn about the school and the community;

2. Training: The student encounters simulated problematic training situations in the series (called "days") of twelve problems each; and

3. Evaluation: A third "day" of simulated situation is reserved for the student to assess himself.

Again, three modes of instruction may be used in Phase 2 training. These are classed as a) Mode A: individualized laboratory (tutorial instruction); b) Mode B: conventional classroom instruction (large or small group); and c) Mode C: self-instruction.

Inner-City Simulation Laboratory

The Inner-City Simulation Laboratory (ICSL) is the second simulation program for teacher preparation developed by Cruickshank in cooperation with Science Research Associates (SRA). In summarizing the rationale for developing the ICSL, Cruickshank states, "The simulation experience is designed basically to help reduce the 'reality shock' experienced by teachers who wish to work with the disadvantaged, but are poorly equipped to do so" (2:1).

Uses for the ICSL. Cruickshank proposes two uses for ICSL. In describing the first of these, he states:

> THE INNER-CITY SIMULATION LABORATORY, like the TEACHING PROBLEMS LABORATORY, is designed to provide opportunities for pre- and inservice teachers to accomplish two goals that are not readily attained through normal modes of academic inquiry. First, the ICSL attempts to create a lifelike model of a ghetto school and neighborhood so that the learner can study the setting and attempt to understand it. [2:1]

A second advantage (or use) of the ICSL is that it provides a classroom, albeit simulated, "wherein the learner can assume the role of the teacher and work toward solutions of the most frequent, most severe problems reported by samples of teachers from different settings" [2:3].

The components of the ICSL. Its materials are separated into two units--the director's unit and the participants' unit.

The director's unit. This unit contains all the materials needed to conduct the simulation. Included in this unit are two filmstrips with accompanying record, 14 sound-and-color films, a set of role-play cards, a book of spirit masters, the *Simulation Director's Guide*, and a complete participants' unit.

The participants' unit. The professional materials normally available to teachers are replicated in the participants' unit, which consists of the *Data Book* and a set of cumulative record folders.

Building the simulation laboratory: the research. In constructing the ICSL, two basic tasks were determined. The first task was to identify the day-to-day problems of inner-city teachers. The second task was to create a lifelike setting in which these problems could unfold.

Possible schedules for using ICSL. The Inner-City Simulation Laboratory was developed to be used in either preservice teacher preparation or as part of in-service programs.

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An abstract of "Protocols: A New Dimension in Teacher Education," by James Gee and David G. Berliner

SUMMARY

Herein are discussed the background to the development of a system of teacher training; protocols generally, including the parameters of protocol materials, kinds of protocols, and characteristics of protocols; protocols in other fields of study and their relationship to protocols in education; the concept of a concept, including attributes of concepts, types of concepts, and operational definitions of concepts; concept analysis, including concepts as verbal behavior, the interrelationship among concepts, and the analysis of concepts; conceptual structure, including the relationships of hierarchy to conceptual structure and the relationship of language to conceptual structure; the teaching and learning of concepts, including a number of variables related thereto; the use of concepts, including the relationship of concepts to interpretation, criteria for judging concepts, the relationship of competence to performance, and the evaluation of concept comprehension; the evaluation of protocol materials, including realism, relevance and salience, the phenomenon of concepts in use, and design considerations; the current status of protocol development, including the project at Bucknell University; and recommendations with respect to protocol development and teacher education, including protocols as entering behaviors, protocols and teacher training programs, concepts for the development of protocols, developmental steps for production of protocol materials, entering behaviors for protocol users, communications between protocol developers and users, protocols and instructional guides, and protocols and dissemination.

ERIC DESCRIPTORS

*Educational Development
*Instructional Materials
*Protocol Materials
*Teacher Behavior
*Teacher Education

THE TASK

With respect to teacher training models based on the use of protocol materials, what components have been shown to be successful? What procedures are most appropriate for the development of these components?

BACKGROUND TO THE DEVELOPMENT OF A SYSTEM OF TEACHER TRAINING

The development of protocol materials around concepts which are directly related to skills or affective experiences, or which serve to help a teacher understand classroom- or school-related behavior, and which reliably meet stated objectives rounds out a teacher training program.

INTRODUCTION TO PROTOCOLS

Protocol materials are reproductions (visual, auditory, audio-visual, or printed) of *behavior* that instance *concepts* relevant to teaching and learning. Fundamentally, protocols are meant to ensure that theory is handled at a level not too remote from the actual problems of teaching, while at the same time ensuring that practice does not ignore relevant theoretical ideas. The immediate purpose of protocols is to provide raw material or data for interpretive competencies in teachers. Thus, the protocol is meant to serve a dual role: first, it is meant to be used to teach a concept, and, secondly, it is meant to teach how to interpret and diagnose human behavior in terms of those concepts.

Protocols need not lead directly to the acquisition of any skill, in the strict sense, or to any course of directed action. It is a necessary and sufficient condition that the protocol contain behavior that is educationally significant and that it instances a concept useful for interpretive purposes in the work of the teacher.

Parameters of Protocol Materials

A brief review of the general plan which was initially proposed for the production of protocols may help to explicate the nature of protocol materials more clearly. The general plan for the production of protocols consists of two basic interrelated components or subplans: one for the pedagogical domain and one for the basic fields of knowledge. The pedagogical plan is represented in a coordinate system comprised of three generic categories: "setting," "level," and "behavior." "Setting" refers to the context in which behavior occurs. "Level" stands for the stage of a person's chronological development or level of education, and "behavior" refers to observable activities of a person. In the basic fields of knowledge, the "level" category is held constant, but two new categories of epistemological significance replace the "setting" category and the "behavior" category. These are "types of knowledge about knowledge" and "areas of knowledge." "Areas of knowledge" is used to refer to the various arts and sciences. "Types of knowledge about knowledge" refers to the various elements of the instructional content of teaching, for example, laws, rules, concepts, values, and facts; it also refers to the various operations performed upon that content, such as logical operations like defining, explaining, classifying, and valuing.

Kinds of Protocols

Protocols are often referred to as "materials for interpretation and diagnosis." They are meant to facilitate understanding primarily and not directly to foster any specific skills. The prospective teacher is to learn to interpret human behavior from the observation of various "symptoms" of that behavior, in terms of a set of sophisticated concepts drawn from various fields and disciplines relevant to the teacher's task. The concepts may come from diverse areas of psychology, sociology, philosophy, etc.

The basic sort of protocol may be called an "ostensive teaching protocol." In order to judge a skilled performance, one must first be able to recognize, classify, or interpret the behavior involved. And, as noted, one function of protocol materials is to aid the student in this process. If the materials are used only for this purpose, to recognize and classify behavior, then they are true protocol materials. If, however, the materials are used first to help develop the student's skills in classifying acts and second to instruct him in the standards by which the class of acts might be judged, then they become "first-phase training materials." Thus, some materials, depending upon their use, can function in one setting as "ostensive teaching protocols" and in another setting as "first-phase training materials."

Characteristics of Protocols

Protocol materials may involve, at times, certain amounts of staging of their content. They may also involve a certain amount of simulation. Since protocols are designed as an improvement over the ephemeral and chaotic character of actual behavior, such procedures may often be necessary. However, all protocols must exemplify behavior that actually did occur or that is quite likely to occur in much the same general form as the simulation or staged performance. The situations portrayed must be as natural and realistic as possible. The goal is always a protocol that will reproduce a natural and realistic instance of human behavior which will serve to exemplify in a clear manner a specific and appropriate concept. Of course, a concept can only be effectively instanced by a series of protocols, the entire series exemplifying a broad range of dimensions and attributes relevant to the attainment and generalization of the concept in an unambiguous manner.

PROTOCOLS IN OTHER FIELDS OF STUDY AND THEIR RELATIONSHIP TO PROTOCOLS IN EDUCATION

While the use of protocols in education has been a relatively recent development, protocols, in the general sense of that term, have also been used in other fields, including experimental psychology, linguistics, business administration, clinical psychology, skill training, and anthropology. "Diplomatic protocols" represent one of the earliest usages of the word "protocols." A protocol, in its original sense, is an original copy, draft, minute, or record of a document or transaction.

The whole point and purpose of protocol instruction is the understanding, teaching, learning, and using of concepts in an intelligent and effective manner appropriate to the process of education. We can now turn to a consideration of the concept of a "concept."

THE CONCEPT OF A CONCEPT

Attributes of Concepts

The first and fundamental way of viewing a concept is to see it as what Arthur Danto (4) has called a "semantical vehicle." A semantical vehicle is any entity that bears a descriptive meaning. Concepts are only one type of semantical vehicle. Sentences (or propositions), terms, pictures, names, and ideas are also semantical vehicles.

The most common way of looking at concepts has been in terms of the Russellian trilogy (8) of "property," "class," and "instance." Every concept includes a property or a set of properties that defines a class which contains various instances specified to be such by the criterial property or set of properties.

But in addition to property, class, and instance, one must be given or discover a rule by which to group the defining or criterial properties of a class of instances (instances defined to be such by those properties). This rule of grouping is of the utmost importance. Knowledge about whether concept learning has taken place is obtained when the learner makes appropriate category responses--that is, when he is able to apply the "classification rule" to a new set of instances involving the concept dimensions (6). It is often thought that how a concept is defined makes no difference so long as all the necessary and sufficient properties defining the relevant class are present. But this is wrong. It is precisely at the point when the trainee must generalize the learned concept to new instances that we see the importance of the definition of the concept.

Protocol materials that do not allow the student to discover, or that do not tell him, a *rule* of combining the properties definitive of a class are useless.

Types of Concepts

For the most part, different concept types have been defined in terms of logical operators, primarily conjunction and disjunction. The rule which defines a conjunctive category stipulates that an entity is an instance of the concept if and only if all the defining attributes or properties are jointly present (or some defining portion of them) in the appropriate range of values for those properties. The rule which defines a disjunctive category stipulates that an entity is an instance of the concept if and only if a certain property or set of defining properties is present *or* if another specified property or set of defining properties is present. The rule defining a relational concept stipulates that an entity is an instance of the concept if and only if the defining properties stand in a specified relation to each other. Conjunctive concepts are by far the most common, at least in experiments on concept attainment. However, many of the concepts in school learning, especially the most difficult ones, are relational rather than conjunctive or disjunctive.

Operational Definitions of Concepts

It is often necessary--especially in empirical research and for evaluative purposes--to operationalize definitions. A simple way of operationalizing the definition of concept is to deal with it as verbal behavior. Concepts are for the most part words, after all. The operational definition of concepts as verbal behavior leads also to the very point of protocols: to improve teaching. The point is that most of what teachers do is verbal behavior. "If you want to improve teaching, one of the ways to do it is to improve the talking of teachers" (9) . And the way to improve the "talking of teachers" is to give them a set of "official" or refined concepts, from relevant fields, by which to interpret their behavior. The theoretical training of a teacher via protocols involves giving him a noncommonsensical language with which to interpret and understand human behavior.

CONCEPT ANALYSIS

Since protocols involve concepts as a necessary and sufficient condition, protocols can neither be produced nor used successfully unless one knows what the meaning of the relevant concepts are and is aware of the tools for analyzing concepts and the sets of relationships into which they enter. Since concepts are most fruitfully looked upon as words or as verbal behavior, this involves knowing what constitutes the meanings of words or verbal behavior, and the techniques of linguistic and conceptual analysis. Tools for determining the meaning of words and propositions, and techniques for analyzing language, have developed rapidly in contemporary analytic or linguistic philosophy.

Concepts as Verbal Behavior

The meaning of a semantical vehicle, such as a concept or a word, is often comprised of three parts: an extension, an intension, and (for some words) a connotation. When analyzing protocol materials, one must be aware of all these aspects of the concepts involved.

The Interrelationship among Concepts

The meaning of a concept can rarely, if ever, be determined by an analysis of that concept in isolation from the system or segment of language in which it functions. At the very heart of the analysis of language or a conceptual system is the dictum that "meaning is a function of use." Language is adaptable to many uses and functions in carrying on the various types of activities that are essentially linguistic in nature. Wittgenstein (10) refers to these different activities, which involve different sets of interrelated concepts, as language games. One of the purposes of protocol materials is to enable the prospective teacher (and current teachers) to discard less efficient and somewhat outmoded language games for more powerful, more formalized, more predictive ones.

The Analysis of Concepts

Since the student is to learn a new language game via protocols, a game which will equip him with a noncommon language with which to see, those who produce protocols must be adept at conceptual analysis. Hence we will examine briefly the notion of analyzing concepts.

Psychologists and philosophers have developed many and diverse methods of analyzing concepts. Perhaps one of the most pervasive and effective has been the method of linguistic analysis developed by contemporary "ordinary language" philosophers. We will briefly examine the stages of a simplified method of conceptual analysis.

The first two stages of analysis are to identify the "area of discourse" or language game to be studied and to distinguish the conceptual from the empirical and evaluative questions.

The third stage in conceptual analysis is the collection of as complete as possible a compilation of all the resources of the language, both idiom and vocabulary, in the relevant area of discourse with which we are concerned.

The next step--the process of defining the crucial terms and concepts--is perhaps the most important and difficult aspect of conceptual analysis. There are many different types of definitions designed for different purposes.

A fifth stage of conceptual analysis involves the consideration of cases of various sorts, and the final stage is the formulation of results.

CONCEPTUAL STRUCTURE

Protocols are used to teach concepts. Therefore, it is necessary to have some idea of the variables that come into play in the teaching and the learning of concepts.

Hierarchy and Structure

The importance of the notion of hierarchical structure of concept learning and the network of prerequisite concepts has often been pointed out and is analogous in many respects to the functioning of various subordinate learning sets in a hierarchy of knowledge for the mastery of a particular class of production learning tasks. For example, if a compound concept is to be learned, complete learning of the component concepts increases the ease with which the compound concept is mastered.

Protocols are meant to offer new and more efficient concepts and principles of organization which are meant to be integrated into prior conceptual or cognitive structures of teachers and prospective teachers.

But, of course, one must be certain that the requisite entering behavior is present to begin with, an entering behavior established by the existing conceptual structure of the learner. If it is not present, it must be acquired, perhaps by less-advanced, "simpler," more general protocols, designed to facilitate positive transfer from lower levels of conceptual structure to higher levels. One of the advantages of protocol instruction is that the producer of protocols may reproduce human behavior at any level of complexity and thus allow the process of instruction to start at an appropriate level of generality and inclusiveness demanded by the relevant population of learners.

Conceptual Structure and Language

The language (sets of language games) the learner brings to the protocols is of fundamental importance. The language itself and its interaction with (in this case) the protocol materials and instruction are key determinants in the success or failure of not only protocol instruction but any higher-level conceptual learning. The fact that language can be a crucial determinant in how we think about things points to certain pitfalls in language. Instead of using language, we are often in a very real sense used by it. The process of conceptual analysis can help us to avoid pitfalls of lanaguage, which are only of any danger when we are unaware of them.

The links between our depth-psychology, our behavior, our ways of life, our forms of thought, and our conceptual systems and the language in which we express them are very binding and very complex.

Protocols are intended to facilitate initiation into conceptual frameworks more precise and sophisticated than those available in commonsensical conceptual systems. And one way to make these "official" concepts more available is to make them more "codable," that is, to give the student a language in which the concepts are easily "coded" and thus made readily available for use in interpreting and diagnosing human behavior. To the extent that a particular language provides a vocabulary entry or a construction with just the meaning needed for a particular problem, it can be expected that the coding of information will be more accurate and better retained by the speaker. Where such coding requires a good deal of circumlocution or where the coding categories are so broad as to include any of the competitors of the relevant instances, one can expect the coding of information to be less exact and not as well retained by the speaker. Of course, concepts relevant for inclusion in protocol materials are meant to function in the prior manner.

THE TEACHING AND LEARNING OF CONCEPTS

With caution, we may point to some of the implications of experimental work for the teaching of concepts to teachers and prospective teachers via protocols.

Variables: Conjunctive, Disjunctive, and Relational Concepts

It appears that the type of concept to be taught is a significant variable. Conjunctive concepts are most easily attained, while relational concepts are somewhat more difficult; disjunctive concepts seem to be the most difficult to attain.

Variables: Positive and Negative Instances

If one considers just the simple case of a negative instance versus a positive instance, it can be said that students learn more efficiently from positive instances than negative instances. However, Berliner (2) found that learning with a mixture of instances, positive and negative, was more effective in facilitating transfer of a teaching skill than was the presentation of positive instances of the skill alone.

Variables: Essential and Nonessential Properties

As the number of defining attributes needed to explicate a concept increases so also does the difficulty of concept attainment.

Variables: Redundancy

When there are various defining properties, the learner is often helped by the fact that in most concepts the defining features are redundant with respect to each other.

Variables: Exposure Time

If the student has an ample amount of time to study the instances, reflected in ample exposure time, the ease of concept attainment will increase.

Variables: Sequencing

It would seem reasonable that an orderly or systematic presentation of instances would increase performance in concept learning tasks as against a disorderly or random presentation, although there is some evidence to the contrary.

Variables: Variety

Regardless of the type of sequencing procedure used, a variety of instances is required to teach a concept.

Variables: Heuristic and Didactic Teaching

While the issue often hinges upon just what is meant by the two approaches, the approach that best fits protocol instruction will have to be determined with evidence directly relevant to protocol materials. It should be noted that the heuristic approach is often liable to consume more time than the didactic approach, and, of course, it is impossible to discover for oneself all that is to be learned.

Variables: Verbalization

The importance of verbalization in the process of concept learning is not clear. There is evidence that verbalization covaries with correct responses in concept attainment tasks but that is not essential to making a correct response.

Variables: Feedback

Bruner has remarked that "unless there is some meaningful unity in what we are doing and some way of telling how we are doing, we are not very likely to strive to excel ourselves" (3:119).

Variables: Media

Protocols, as instances of concepts, may be in many forms--audio, audiovisual, typescript, or even, perhaps, purely visual. In all likelihood some forms are more appropriate to some concepts than others. The matter of form is a relative one.

USING CONCEPTS

Concepts and Interpretation

The only true test of conceptual comprehension is the use of the concept learned, that is, the correct generalization of the concept to instances that the individual has not been trained on. Concepts learned from protocol instruction are meant to be used to interpret and diagnose the human behavior that the teacher is likely to come into contact with in his work. It is not the case that teachers, or anybody else for that matter, can choose whether or not to interpret experience conceptually. We always do so and must. Indeed, concepts are often defined in such a way as to emphasize this point.

Conceptualizations made in the classroom do not just affect the viewpoint of the teacher; they affect, for better or worse, the lives of the students. Some well-known examples of the practical import of concepts have been pointed out by the civil rights movement. Because of a certain behavior sample, say IQ=73, a person may be declared "mentally retarded" or "of a foreign language community." Which of these two labels are applied to a Mexican-American student, for example, is of critical importance.

Criteria for Judging Concepts

The ultimate criterion for judging any conceptualization is whether or not it works. A concept can fail to work in several ways. It may fail to cohere with the rest of our conceptual system.

The method of coherence may be supplemented by the predictive value of concepts.

Another criterion of successful conceptualization is the power of the concept in question. If the concept fails to be adequately generalized to new instances, it lacks the requisite power.

A final test of concepts, beyond their coherence, predictive value, and power, is their universality.

Competence and Performance

The conversion of competence into performance is a conversion of the potential into the actual. Factors limiting performance are often complex and relative to the type of performance required and the intensity of the limitation.

Evaluating Concept Comprehension

While the student's ability to generalize the concept to new instances, to sort noninstances from instances in a range of experiences in which he has not been trained, is the most direct test of conceptual comprehension, it is by no means foolproof. The abilities to justify, reason, diagnose, predict, and intepret are as important as the ability to identify unfamiliar instances, and all these can be evaluated. Another criterion for determining whether concept understanding has taken place is the change or lack of change in the student's language.

EVALUATION OF PROTOCOL MATERIALS

The trainers of teachers, and their associated institutions, are not likely to modify teacher preparation programs unless some evidence about the effects of protocols can be presented--nor should they do so. This section will note some evaluation ideas from which judgments about protocol materials can be made. Thus far in the development of protocols there has been too little attention paid to these matters.

Realism, Relevance, and Salience

Protocols are to be "realistic representations of educationally relevant behaviors." Thus an evaluation strategy should include evidence that the realism and relevance criteria are met. Further, the behaviors of interest must be salient, or the materials will be merely reproductions of behavior without necessarily being reproductions of behavior to which one can apply appropriate concepts.

Simple rating scales can be used for both the ratings of realism and relevance.

Concepts in Use

An individual who has attained a concept uses language differently from one who has not achieved understanding of the concept. This difference in language usage can be measured and used as evidence of concept acquisition. There are many ways to measure that difference.

Design Considerations

The procedures to determine concept acquisition through language are not simple. In terms of designs for the study of concept acquisition, it is potentially easiest to collect linguistic behavior samples of interest from transcript of classroom behavior; audio tapes give more difficulty, followed by filmed or videotaped protocols. Non-protocol material, presenting naturally occuring classroom behavior, is most difficult to study.

Another factor which will affect the design of studies for the evaluation of protocols is the familiarity of the behaviors which are instanced. The likelihood of eliciting a verbal repertoire which indicates concept attainment is decreased as new and unfamiliar instances of the concept are encountered.

Still another factor which must be considered in evaluation designs is the length of time between training and testing.

Summary

We may think of concept attainment, evaluated through a report of the language used by the trainee, to be easiest to demonstrate when restricted protocols which are labeled or cued present familiar instances close in time to the training events. We may also think of evaluative information as most difficult to obtain when we present unselected and unlabeled natural classroom activities containing unfamiliar instances of a concept a considerable time after training.

What is particularly important to note in the design of studies to evaluate the effectiveness of protocols is that the most impressive evidence of concept attainment--as reflected in the use of concepts to interpret behavior--is also the most difficult to obtain. Many design tradeoffs between the factors must be made so that evidence of effectiveness is both obtainable and impressive.

CURRENT STATUS OF PROTOCOL DEVELOPMENT

The first attempts to develop protocol materials are ending, and a second round of development is beginning. What follows are brief descriptions of the various projects, with heavy emphasis on the project at Bucknell University.

Bucknell University

Under the direction of William Heiner, protocol materials in the area of reading have been prepared. Video tapes and films with instructional manuals for the trainers of teachers have been developed around the concepts of auditory discrimination, individual reading rate, word-by-word reading, phonetic analysis, and letter identification.

The rationale for the concept "auditory discrimination" and the preparation for making the film are described by Heiner as follows:

Rationale

The ability to identify the similarities and differences between the sound of words is generally considered to be an important factor in the process of learning to read. Most reading experts believe this ability should be developed either prior to actual instruction in reading or during the very early stages of instruction.

The label for this ability is Auditory Discrimination. It signifies four characteristics which can be used to associate groups of words. Actually, this label might be considered to be a broad category subsuming four concepts. Monosyllabic words, or syllables which are parts of words may be similar in the following ways:

1. Their initial phonemes may be alike.
2. Their medial vowels may be alike.
3. They may end with the same medial and final phoneme, that is, they may rhyme.
4. They may end with the same phoneme.

The protocols presented in the film, Auditory Discrimination, are intended to illustrate the subtle differences in the degrees of understanding which various children may have during the early part of first grade. Some can demonstrate that they can use all of the discrimination rules. Some can use one or two. Some cannot demonstrate any of the rules.

Viewers should come to understand that for purposes of assessment of reading difficulty they must observe pupils in situations where each of the discrimination rules could occur. Further, they must observe a child in a number of situations in order to establish minimum reliability for their observations.

Selection of Subjects and Preparation for Filming

Each of the three groups of children shown in the film was assembled in order to allow the following characteristics:

One or two in each group had total mastery of the concept.

Two or three had partial mastery.

One or two children appeared to have no understanding.

Each subject was tested by the project director to establish his degree of mastery. The teachers of the groups were given materials which they used to give the children instruction in the tasks during the week prior to filming. Finally on the day before filming the director "rehearsed" for the filming by running through the tasks with each group while a video recording was made.

In this way the actual film, depicting auditory discrimination mastery or difficulties of a particular type were natural, both in the reactions of teachers and in the materials used to instance the discrimination of the children. By using score sheets to categorize the behavior of children as they tackled words to be learned, the training protocol can become a test protocol--a check on concept acquisition. Suppose child X was picked because he cannot distinguish among some initial phonemes (hat, bat, fat, cat) and exhibits that behavior in the protocol to instance the concept of initial phoneme difficulty (a part of the more general concept of auditory discrimination in initial reading acquisition). Further, suppose the viewer identifies child X as having difficulty in understanding initial phonemes. In this case, concept acquisition on the part of the viewer is demonstrated. Based on that, concept diagnosis and prediction can also be made. Thus, the material presenting the concept "auditory discrimination" would seem to serve as a protocol in the ways intended--for the interpretation, diagnosis, and prediction of behavior.

Other Projects

Other projects have included those developed by the Educational Development Corporation in Cambridge, Mass.; Indiana University; Michigan State University; Ohio State University; the Oregon State System of Higher Education; San Fernando Valley State College; the Florida State Department of Education; the Stanford Center for Research and Development in Teaching; the University of Colorado; and Washington University in St. Louis, Mo.

Summary

Part of the first year's developmental effort was to help define the concept "protocol." By looking at the materials produced and judging the extensive and intensive characteristic of the concept of protocol, a better understanding of the task seemed to be achieved by protocol developers. The final products varied from nonsensical to excellent representations of a concept. The technical aspects of the protocols ranged from the hardly viewable to exceptional. The artistic quality varied from mundane to esthetically pleasing. The field testing ranged from unacceptable evidence of effectiveness to passable evidence of effectiveness. What is clear from the examination of the present status of the protocol projects is that approximately one-half of the first year's efforts have resulted in usable products. This is probably not a bad batting average, given the newness of the concept "protocol." Since most of the developers involved in protocol production for the first year are also developing protocol materials in the second year, a sharpening of techniques, analytic and technical, can be expected. However, the goal of developing an extensive library of protocols, instancing important educational concepts, is as yet far from being realized.

PROTOCOL DEVELOPMENT AND TEACHER EDUCATION: RECOMMENDATIONS AND SUMMARY*

The history of protocol materials in education has been short. There are no literature sources to consult on the utility design, effects, etc. of these kinds of materials. However, there has been some experience gained in the first year of development and this can help to guide future development and future findings. These thoughts are presented below.

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*Because it is of special import to the questions that this report endeavors to answer and because the entire discussion of protocols is rather complicated, the final chapter is set down essentially in its entirety.

Protocols as Entering Behaviors

The beginning section of this report noted that skill training programs and affective experiences have some deficiencies because they rely on the trainee's possession of much previous knowledge before he engages in a training module of some sort. Perhaps, then, one way to think of protocols is that they provide appropriate entering behaviors to these training experiences.

> The folly of requiring the student to perform in ways for which he is inadequately prepared is so often repeated we forget that it is entirely avoidable. No matter what feats of will, self-denial, and enthusiasm the student may perform and no matter how much dedication, love, and imagination the teacher may supply, the student cannot acquire new performances based on other performances which he has not acquired. Learning builds on learning in the way success builds on success. When the foundation blocks are missing, future construction, if possible at all, is a very precarious affair. [5:58]

"Entering behavior" describes the behavior which a trainee must have acquired before he can acquire some new terminal behaviors. Skill training experiences, particularly, specify the terminal competencies of trainees but neglect the specification of entering behaviors. In the first year's developmental work on protocols, materials which have these characteristics have been called, at times, first-phase training materials. The conception of protocols as entering behaviors has more utility because it links the development of training modules and protocol materials directly. One should not proceed without the other. As a developer of training materials considers terminal behavior, he should analyze the needed entering behaviors. Protocols can serve this purpose admirably.

There is a broader connotation of "entering behavior" than was used above, which also fits "protocol material." This is the conception of protocols as entering behaviors to be mastered before one observes or teaches in real classrooms. This broader conception implies that not all protocol materials should be linked to training experiences with specified terminal competencies. This is as it should be. Since the development of protocols is designed to build the trainee's skill in categorizing phenomena, the acquisition of appropriate concepts may well be considered as the requisite entering behaviors to classroom observation or to teaching.

Protocols and Teacher Training Programs

If not all protocols need to be linked to training but can be considered the entering behaviors to classroom observation or teaching itself, then protocols, like a general teacher education program, must reflect concepts from the entire foundations areas or any of the disciplines that can provide insight into pedagogical concerns. This was recognized and discussed briefly in the section on parameters of protocols. What was not noted there, however, was the fact that in the process of protocol development a validity check of teacher training programs can be made. Teacher trainees learn hundreds of concepts which are supposedly useful in their teaching. Yet we have found in the process of searching for behavioral instances of certain concepts just how fragile those concepts can be. One project set out to provide protocol materials on concepts like a student's "constructed sense of self," a concept of considerable importance in psychosocial development. Instancing such a concept becomes an overwhelmingly complex problem.

When the behavioral manifestations of a concept prove difficult to obtain, a question about the validity of teaching that concept must be raised. How much time and energy must one devote to teaching a concept whose behavioral referents are difficult to point out? Perhaps the criteria for a complete teacher education program can best be determined by trying to develop protocol materials. At that point, discussions about the utility of the concepts to be taught in the programs can be made on the basis of whether or not those concepts can be instanced in protocol materials. Teacher education, like advanced mathematics, may have left its concrete referents behind. This need not be bad but is perhaps the proper study of graduate students and the academic community. The person who engages in teaching desperately needs less theoretical and more reality-based materials. As Gliessman has noted,

> It is in the process of interpreting behavior in concrete situations that theory and reality meet. In the process of interpretation, theoretical concepts enlighten behavior and, in turn, behavior provides concrete referents for theoretical concepts. In teacher education, such interpretations (using concepts, for example, from educational psychology, philosophy and sociology) is a means to understanding the complexities of teacher and student behavior in the classroom. With such understanding, the teacher is in a position to exercise some control over the multitude of events that occur around him. Without such understanding, he may be largely a victim of circumstances and events that he does not really comprehend. [7:1,2]

It appears that many teacher education programs forget to bridge that gap between theory and reality. Engaging in the process of protocol development--even without the actual production of protocol material--could serve to reshape a teacher education program. The resultant program might not produce teachers who are victims of the circumstances and events which they do not really understand.

Concepts for the Development of Protocols

The above argument points out the fact that there is a need for the development of an inventory of concepts which are appropriate entering behaviors for teacher trainees and which can be instanced in protocol materials. The emphasis of the protocol projects has been on development of materials. The need now is for concept maps to guide the developers. Content analysis of leading textbooks in the foundation areas could provide such an inventory. Other methods could also be used. The final product, however, would be an inventory of concepts, their interrelationship, and hierarchical structure, such that teacher education programs and protocol developers can receive guidance. This is, perhaps, a monumental task, but the process of concept analysis and definition is not easy to engage in and requires the expertise of natural language philosophers and scholars of the discipline. A national committee of such people, charged with producing an inventory similar to Berelson and Steiner's *Human Behavior* (1) but concentrating on concept relations and behavior indices of concepts, could serve a useful function.

Developmental Steps for Production of Protocol Materials

The production of training materials has given rise to well-established procedures for development. The 27 steps used in the development of minicourses stand as checkpoints and guides to development of usable training materials. We are, perhaps, reaching a stage in which the sequence of development of protocol materials may be stated as guides for production. Such a sequence might include the following steps:

1. Analyze subject matter area for concepts;
2. Decide on utility or power of concepts in that area;
3. Locate concepts in master-coordinate system;
4. Choose concepts for further analysis;
5. Engage in concept analysis;
6. Specify behavioral referents for concepts under analysis;
7. Choose those concepts for production as protocol materials;
8. Choose medium for the protocol;
9. Choose teaching techniques for protocol production;
10. Produce pilot manuals;
11. Produce pilot protocols;
12. Conduct preliminary field test;
13. Collect formative evaluative information, including evidence of concept attainment;
14. Revise manuals and protocols;

15. Finish procedure manuals and protocols;

16. Conduct operational field test; and

17. Write summative evaluation report.

This list will necessarily require modification and extensive explanation of these brief summary statements. What is obvious, however, is that 12-month contracts for the development of protocol materials will result in a less than perfect product. The first year of production saw both poor conceptual analysis and poor field test reports. Many developers had to use their first productions as final products. Development of protocol materials must be tentative, with the developer having the option to rework his material into its most reliable and valid forms. Twelve-month contracts are not conducive to that kind of recycling procedure. Perhaps 18-month contracts for protocol developers would be more likely to produce the kinds of products which could have great impact on teacher training.

Entering Behaviors for Protocol Users

Just as protocols may be considered as developing the entering behaviors of trainees who will take other training, observe classroom behavior, or teach, so do protocol viewers need to be adept at certain things in order to profit from instruction via the protocol materials. Perhaps the key entering behavior is ability to observe selectively and without evaluation. To facilitate this, it is recommended that a training film be developed, perhaps 30 minutes in length, which leads an observer of protocols or teaching behavior in general to

1. Direct his attention to particular teaching behaviors, after being given instructions about what to focus on;

2. Exclude from observation extraneous and irrelevant teaching behaviors, after being told what the focus of the observation should be;

3. Refrain from making evaluative, "good-bad" judgments which interfere with understanding the phenomena being presented; and

4. Identify teaching behaviors of interest using a "professional" rather than a "common sense" language (this can occur after a viewer has been given definitions of particular concepts and studied instances and noninstances of the concepts).

The film could begin with a short clip of teaching behavior and then discuss certain features of observation. The viewer will need a new language for thinking about abstracting behavior and relating the concepts to the observer's purposes. The beginning clip can be rerun several times, each rerun illustrating a different configuration of purpose and concepts. Following this, the viewer could be led through a series of graded tasks, each task becoming more complex. For example, the first might involve only [illegible] track to help focus the attention of the listener. Sound plus animation might be used next so that appropriate concepts are viewed as the sound track plays. Clips of "live" students and teachers would then be presented, edited to present a restricted visual and auditory field without distracting phenomena. Finally, there could be a particularly rich interaction sequence. Between and during the graded series of teaching behaviors, a narrator could lead the viewer to focus his observation. The film could end with specific assignments for observation which would require the viewer to sort out selected behaviors of interest and separate them from distracters.

This kind of training in observation can provide the appropriate entering behavior for viewers of protocols. Without such training, viewers do not observe selectively and color their observations by their evaluative responses to teaching activities.

Communication Between Protocol Developers and Users

The protocol development project is only one of several programs in which the Bureau of Educational Personnel Development has an investment. The goal of Task Force '72 was to interrelate the thrusts of that bureau so that individual programs would not be isolated. It appears that one outgrowth of Task Force '72 is a belief that protocol developers can serve to develop materials which aid model elementary teacher education programs, competency-based teacher education programs, training complexes, and teaching centers. To serve the various programs, protocol developers must be kept informed of the needs of these programs. Thus far, only limited contact among programs has occurred. It is recommended that the Leadership Training Institute or another agency create a training materials and protocol materials catalog of products and needs. The dissemination of the needs catalog might help protocol developers to produce materials which can receive "instant" adoption by a teacher training program. Somehow a mechanism for the communication of needs must be developed so that fragmentation among the programs does not occur.

Protocols and Instructional Guides

Those most familiar with the dissemination of films and video tapes have noted that those materials rarely get lost or misplaced. However, the manuals and guides which accompany them often disappear. This leads to a recommendation that protocol materials which are films or video tapes contain a brief introduction explaining the goals and nature of the material presented. In this way, whatever the fate of manuals and guides, the visual protocols will contain enough information to be used without excessive dependence on other materials.

Protocols and Dissemination

At this writing, only informal systems exist for the dissemination of protocol materials. Though some long-term planning is being attempted and material centers are being established, an interim dissemination mechanism is desirable. Enough interest in protocol materials now exists so that the choice of a few select protocols for dissemination would be appropriate. In this way a few schools might be able to integrate protocol materials into their programs and provide realistic demonstration centers for the materials.

SUMMARY

This paper has dealt with protocol materials, a new dimension in teacher education. Presented first was an overview of some teacher training programs and their deficiencies. This was followed by an introduction to protocols in education and in other fields of study. Because the crucial factor in protocol development is concept definition and analysis, this report focused on the areas of concept, concept analysis, conceptual structure, the teaching and learning of concepts, and concept usage. Further discussions focused on the evaluation of protocol materials. It seems clear that protocol materials, if conceptualized clearly, if powerful in their ability to organize phenomena, if presented in suitable fashion, and if field-tested adequately, can make a great contribution to the training of teachers and other educational personnel.

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An abstract of "The Promise of Performance (Competency)-Based Education: An Analytical Review of Literature and Experience," by Bruce Joyce

SUMMARY

Herein are discussed some working hypotheses for the promotion of competency-based education, including the concept of management, the history of competency-based education, the U.S. Office of Education Bureau of Research teacher education project, the process of planning competency-based teacher education, teacher centers, the direction of education, and the theory that the generalist is in reality composed of a set of specialists; general concepts and definitions of performance-based education; the origins of competency-based education; the relationship of innovation to performance-based teacher education; the Bureau of Research models (again), including their implications for teacher education; models of the "teacher," including their relationship to four different kinds of education; the national teaching style; the nature of a comprehensive competency-based training system; and the nature of a competency-based teacher center.

ERIC DESCRIPTORS

*Performance Based Teacher Education
Educational Innovation
Instructional Materials
Teacher Centers
Teacher Programs

THE TASK

With respect to teacher training models based on a performance-based curriculum, what components of these new techniques have been shown to be successful? What procedures are most appropriate for development of these components?

THE SHORT FORM: BEST-GUESS, WORKING HYPOTHESES FOR COMPETENCY-BASED EDUCATION

"Management" is the watchword of competency-based education. It assumes that one can have clearly defined educational goals, relate them to precise and direct means, and monitor the process so as to determine its effects and revise the program intelligently. The competency-based stance includes behaviorism--the practice of defining human capacity in terms of observable behavior. It includes a preference for direct educational methods--those that achieve changes in behavior by inducing the client to practice the new pattern. Even more characteristic is the stance that complex functions (as teachers, military commanders, quarterbacks) can be conceptualized as a system of related behaviors (a model) related to an environment (a system of subsystems) and that this model can be analyzed into component behavior-streams which can be developed by direct training procedures.

Competency-based education of teachers is the stance that the teacher can be conceptualized as a system of observable behaviors which can be directly trained and assessed.

History

Military training. During and after the Second World War, military training needs resulted in the rise of very pragmatic procedures for designing training systems. These systems employed extremely direct methods and precise assessment measures used at frequent intervals for relatively short training units. Training psychology proved to be effective for preparing persons to fill a wide variety of complex roles under conditions of stress and demanding standards.

Cybernetic psychology. This field introduced the practice of conceptualizing human operations as models of communication and information-processing systems which operated as subsystems of a complex environment. The process of conceptualizing human roles in terms of models operating within model environments gave rise to the creation of simulators as training devices, which combined the advantages of realism (high transferability) with control of task complexity (high "sequenceability") in the design of training systems.

Experience in public education. Experience with competency-based education in the public schools has been largely linked to technological innovation. Language laboratories, programmed instruction, television systems, and Individually Prescribed Instruction (IPI) have all been applications of the competency stance which have had positive results.

Experience in teacher education. Similarly, teacher education has largely been technology- or product-linked. The work by Allen and associates (1), Flanders and associates (9-18), and others has produced positive results with respect to the teaching of teaching skills. The recent work of Joyce, Weil, Wald, and Gullion (20) has provided evidence that it is possible to train teachers to employ a variety of complex models of teaching which are strikingly different from normal classroom behavior.

The Bureau of Research Teacher Education Project. This project provided application of the stance to the systematic planning of teacher education programs. The results of the effort suggest that the competency-oriented stance embraces a wide variety of approaches in the conceptualization of the teacher and strategies for his training.

The system planners, in attempting to conceptualize the teacher and his training, operated in accordance with the findings of the recent reform movements in public education: it takes a convergence of changes --in technology, staff utilization and training, and curriculum-- accompanied by strong leadership, to bring about more than a fleeting change in an educational institution.

The system planners also followed steps which represent the state of the art in the field. Those steps, which constitute the process of planning competency-based teacher education, are listed below.

1. The creation of a "working model" of the teacher, described as interrelated sets of competencies and as a subsystem of the relevant larger environment in which the teacher works (teams, schools, committees, support systems, etc.). The model must really work: collection of competencies that do not fit together into an effective performance model is not an adequate program objective.

2. The analysis of this model into streams of related competencies that can form the basis of components of the training system.

3. The selection of component strategies and the development of specifications for components.

4. The creation of the overall training system, especially interlocking relationships among components, support systems, and communication systems.

5. The organization of management systems to monitor progress, program elements, and program testing and revision.

6. The reconciliation of the program with the client (student) and the field (educational system). (This is not a step to be done after the others but must be accomplished in various ways which are synchronized to the other steps.)

The results of these steps is a modular training system whose elements can be matched to the achievement profile and characteristics of the teacher candidates.

The precision in training which results from this process should be very high. The reason for this can be seen by focusing on three characteristics of the resultant program.

1. A storage and retrieval system of assessment elements which can be used to obtain a precise estimate of candidate competence and progress;
2. A storage and retrieval system of behavioral competency descriptions matched with program elements (modular) for achieving them; and
3. A management system for relating *1* and *2* so that training can be closely matched to candidate needs.

These same features provide the potential for a very high degree of program individualization and personalization.

The implementation of such a program depends on the development of a vast quantity of software. Competencies have to be specified--the U.S. Office of Education Bureau of Research projects each contained 2,500 or more with much remaining to be done. Instructional materials have to be created (the largest bulk job). Assessment devices and a management support material have to be prepared.

Without the production of high-quality software there will be no competency-based teacher education. This point should not be minimized. If it is not taken seriously, the following dilemmas will develop. First, competency-based certification standards will be created without the capacity to assess adequately or remedy a deficiency once it is found. (Several states are currently heading straight into this dilemma.) Secondly, a teacher will be placed in a position where he is expected to be competent but has no training reservoir to turn to, to improve himself. (Some forms of the accountability movement are creating this dilemma by pressuring the teacher to show pupil achievement gains but not providing precise training for him so he can increase his capacity.)

A comprehensive training program which links the preservice and in-service levels is necessary to assure both continuous assessment and equal ability to meet training needs.

Teacher Centers

If technology for the system planning described above is applied to the development of a teacher center, it will have the following characteristics:

1. A description of one or more models of the teacher broken down into related sets of competencies;
2. A modular training system related to those competencies;
3. A diagnostic system which enables the teacher to compare his performance with the modeled behavior and determine areas of strength and weakness;

4. A management system which permits the teacher to relate himself to the training system in light of the diagnosis; and

5. A linkage to schools which permits the teaching center to function so as to a) improve the present mode of operation of the schools or b) to mesh with changes in curriculum, staff utilization, and preferred models of teaching to bring about a new educational environment.

There is considerable evidence that the convergence of forces identified in *5a* and *5b* is requisite to training effectiveness. One cannot successfully train a teacher to one model and then give him a job which demands another or inhibits the performance of the first. Nor, conversely, can one bring about innovation without including performance-based training of the teacher as one of the main thrusts of energy.

As in the case of a comprehensive competency-based teacher education program, a teacher center is dependent on the development of software to permit implementation of diagnosis, training, and management. Without software, a teaching center will not differ appreciably from the in-service workshops of the past.

The Direction of Education

Because the creation of competency-based teacher education programs and teacher centers is an expensive process and, probably more important, because it promises to be powerful, provided it is accompanied by changes in staff utilization, curriculum, and materials of instruction, it must be aimed carefully.

As far as we now know, competency-based education can be applied to a wide variety of quite different conceptions of the teacher. Apparently, then, the designer of a competency-based teacher education program can choose one or more from the available models of teaching that reflect differing educational theories. Will one choose the teacher of Carl Rogers, B. F. Skinner, John Dewey, John Holt, A. S. Neill, David Ausubel, or--whom?

The selection of the model constitutes an explicit selection of an educational stance, for the teacher's behavior gives life to one or more of the possible modes of education, and the choice among them should be a conscious one.

The Generalist As a Set of Specialists

A related choice involves the question, Can we train a general functionary called a teacher or does each educational model require a new set of competencies? My view is that the soundest procedure at present is to view each model of the teacher as unique and to train for specialized models rather than for generalized competency. The generalist of the past has had great difficulty adapting to new models of education--he has been unable to implement innovative teaching strategies and technologies. Thus it seems best, for the present, to conceive of a generalized model as a set of specialized models and to define competence in terms of specific educational practices.

Summary

The above chapter contains an apt summary of nearly all the material in the remaining chapters. Nevertheless, additional comments from these chapters which also seem worthy of mention have been selected and are presented below.

PERFORMANCE-BASED EDUCATION: OVERVIEW AND DEFINITIONS

In contrasting the teacher using general methods aimed at general objectives with the instructional system comprised of very specific and definite methodologies directed at very specific and clearly defined objectives, we find the essence of competency-based instruction as it is distinguished from more familiar forms of teaching.

The distinguishing characteristic of competency-based training is precision in ends and means and, therefore, comprehensiveness and specificity in planning all aspects of the educational program. A person can be competency-oriented and embrace any type of end and any type of means so long as those can be precisely planned.

ORIGINS: WHERE DID COMPETENCY-BASED EDUCATION COME FROM?

The history of experiments in competency-based training in teacher education is scattered and somewhat difficult to pull together. Evidence of effectiveness is so far quite sparse. Among the strands worthy of consideration are the microteaching complex, the interaction analysis complex, research on planning behavior of teachers, and research employing instructional simulation.

INNOVATION AND PERFORMANCE-BASED TEACHER EDUCATION

In the following section is a terribly brief overview of reform movements in education. The theme which is developed throughout the material is, What yield of knowledge have we from the last 20 years which suggests how teacher education should be meshed with other reform strategies?

Reform movements prior to 1950 were directed toward dissemination of one type of teaching method (child-centered, democratic-process teaching) which was assumed to be good for all purposes and was to be used by all teachers. The teacher was assumed to be the critical person in the educational process.

Since 1950 several efforts have changed our insights and our available technology.

1. *Architecture and organization.* A movement to reform school architecture and organization of personnel has left us with the awareness that a) the change of one aspect of a school rarely has

effect but several aspects, changed together, can have potent results and b) the education profession resists change and often absorbs its impact without changing educational output.

2. *Academic reform.* The academic reform movement has developed new approaches to teaching content, created strong materials for children, and has had little general impact on the lives of children except in those places where materials, teacher training, and strong administrative leadership have been present. Again, the message is that a reform effort with several convergent dimensions can be effective.

3. *Technology.* The technological movement has produced a variety of technological forms which are effective for educational purposes but which cannot be implemented in the schools unless accompanied by changes in staff utilization patterns, staff training, physical plant, and curriculum. Simply making technologies available to the teacher has not had much effect on education.

4. *Teaching strategies.* A large number of teaching strategies have been developed and tested with positive results, but implementation is elusive. To implement them requires the confluence of events indicated in *1-3*, above.

The message is clear: a) we have a much larger armory of strategies than ever before; b) the school as presently organized and staffed is highly resistant to all forms of innovation; and c) a confluence of changes has to be initiated including staffing patterns, teacher training, on-site leadership, curriculum, and materials of instruction if changes are to be brought about and maintained.

THE BUREAU OF RESEARCH MODELS: THE APPLICATION OF THE SYSTEMS APPROACH

At this time, the bulk of the experience in broad-scale systems planning of performance-based teacher education lies in the products of the Bureau of Research teacher education program.

All of the several research teams involved in this program developed conceptions of the teacher which shared the following features:

1. *Behaviorist.* The teacher was not only described in behavioral terms but was seen as a behaviorist: a setter of behavioral objectives, user of behaviorally oriented teaching strategies, and user of behavioral measurement techniques. There were no exceptions to this.

2. *Team member.* The teacher was seen as a member of a clinical team rather than as a lone operator in a self-contained classroom. Specialists were envisioned in most cases.

3. *Diagnoser and orchestrator.* The teacher was seen in most cases as working in an environment rich in support systems, especially self-instructional materials. Thus, he functions as a diagnoser and orchestrator rather than as the typical teacher of today.

Implications for Teacher Education: Commonality and Variability in Models of Teachers

The developed performance models reflect an implicit consensus about the most productive roles for the teacher today.

1. Applied scientist (one who helps find the answers) and a behaviorist;
2. Team member (a colleague and a specialist);
3. Decision maker and clinician (a strategist with a range of competencies);
4. Change agent (and one whose personality can cope with change);
5. Manager of instruction, orchestrating vast amounts of instructional material and support systems; and
6. Behaviorist--a systems man in his own right, setting behavioral objectives, breaking down learning tasks into their elements, and selecting learning activities and evaluation devices tailored to a range of students and differing kinds of learning.

The research teams all saw behaviorism as the best avenue to a more humanistic as well as a more efficient education for children and teachers alike.

The wide range of approaches to the development of the performance models included conceptions of a) individualized and personalized education; b) teachers as people who make educational decisions, implement them, and get results; c) teachers as changers of educational institutions; and d) interpersonal and affective behavior.

We consider it vital that more complete and functioning working models of the teacher be created as the programs are developed and implemented. As much as possible, the performance models need to be dynamic models which can unify vast, complex programs and give clear guidance to developers. They need to be rationalized conceptualizations which relate the components of teaching to one another and, thus, lead naturally to related program components. They must clearly relate to the systems which surround the teacher, i.e., material, other personnel, support systems, and decision-making systems. Finally, they must provide some guidance for the task analysts who will break down the major elements of teaching behavior into a clarified system of objectives.

In addition, the development phase needs to ensure that a much wider range of theories about teaching enter the models, which tend at present to emphasize very direct, presentational methods of teaching.

THE MODEL OF THE TEACHER: A GENERALIST AS SET OF SPECIALISTS

The goal of a performance-based teacher education, whether for initial training or at the in-service level, is expressed in terms of a working model of the teacher.

In this chapter we argue that the concept of a teacher who will fill a complex role is a conception of a set of specialists, whether one person or several engages in the specialized types of teaching that are defined. This stance contrasts sharply with the traditional one in teacher education, which is that teaching is a generalized activity of which specialization is a variation.

What are the practical implications of this stance that a generalist is a set of specialists? First, it permits us to identify the roles we would like the teacher to play and to train him specifically for them. Secondly, it assumes that innovations require that a teacher learn new knowledge and skills which have to be made explicit and that he is trained directly. It prevents us from thinking that we can make a change in education simply by getting some "good people" together and pointing them in a new direction. Third, as an extension of the first point, it enables us to turn teacher education into a technically feasible activity, because specialized teacher roles and strategies can be identifed and specialized training can be designed to accomplish them. Finally, it suggests that we determine teacher competence not by indicators of general quality but by evidence that he can do particular jobs. A teacher of high generalized capacity would not be assumed to be competent for any teaching role or situation.

The Four Kinds of Education and the Models of the Teacher

We have spoken at length about different kinds of education and different types of dwellings to house them, but, if each of the various kinds of education is not transmitted in a manner or manners compatible with its aims, they cannot be realized. Thinking of the teaching models as the learning medium, we may ask ourselves: What models of teaching could be used by such a school? Let us look at the available alternatives for several kinds of education we have been discussing.

Basic education. In the previous discussion, we suggested a variety of behavior modification models, but these are not the only possibilities. Group investigation or reflective thinking are possibilities. The modes of inquiry approach could be recommended by, for example, those who feel that arithmetic is best learned in terms of academic inquiry into mathematics or those who feel that reading and language arts should be approached through linguistic inquiry. Nondirective approaches have been used in the basic skills and information areas. Ausubel's (2-6) theory of meaningful verbal learning and his advance organizer strategy were constructed expressly for the purpose. Taba's (25) "concept formation" and Bruner's (7-8) "concept attainment" are particularly appropriate for basic skills and information. Perhaps a combination of models would be most appropriate, especially because they would accommodate a variety of learning styles. Systems planning might create self-administering modular curriculum using behavior modification techniques (for example, IPI) and modules structured around advance organizers or inductive strategies. Teachers called academic counselors might stand ready to assist the children and might use personalized teaching strategies modeled after Rogers' (21-23) or Hunt's (19) to help the children for whom the cybernetic system was not sufficient or appropriate to modify it for them.

Personal education. Nondirective models appear superficially to be sufficient for this area. The nondirective model would certainly make much sense as the basic pattern for the tutor's behavior, as does Hunt's (19) conceptual systems model. However, short courses built on training principles could be available in a kind of educational smorgasbord from which the student could select. In addition, courses built on synectics principles could be offered for those wishing to try to develop their creativity. Awareness training is especially designed for personal development. Inquiry training exercises might be made available for training in scientific inquiry.

Academic inquiry. The academic inquiry models, such as Schwab's (24) science inquiry model, would appear to be ideal in this area. Groups of students could work together, trying on the modes of the disciplines and developing conceptions of the major ideas of the academic areas.

However, academic inquiry is not, by any means, the only possibility. The advance organizer model was developed to teach the structure of the disciplines and could be used as the major model in this area. Inductive and reflective thinking models also are used to structure academic inquiry, as are inquiry training models, group investigation, and social inquiry. Models developed from developmental psychologies like Piaget's provide paradigms on which we could approach academic inquiry. It could be reasoned that several models should be combined for this kind of education.

The model presented above suggests that the elementary school teacher might be any one of a number of kinds of specialists. He might engage in more than one mode of activity, but it is inconceivable that very many teachers would stretch over several very different modes.

It is possible to think of the model of the teacher in terms of three dimensions which would define his needed competencies and their limits. One is the age of the children with whom he would work. A second is domain--the subject or skill area in which he would work. The third is mode or the type of general strategy which he would use. Thus, some teachers might be prepared to work with young children in science with academic inquiry modes, others with older children in media with a mode emphasizing creative thinking, and so on.

In other words, there is a general choice between a generalized model of the teacher and specialized models, which can be combined to develop the conception of the specialist. The use of the more specialized models permits the construction of more compact training programs which might well consume much shorter periods of time than the present ones.

Performance-based approaches to in-service education can potentially be combined with innovative efforts to organizing so that training support systems related to the appropriate models of the teacher are incorporated into the innovative effort. For example, supposing we were to attempt to build an educational program for children built around learning centers reflecting the formats described above. A teacher education support system could be attached to the operation in such a way that teachers could be trained for the mode they were to staff.

THE NATIONAL TEACHING STYLE

Our review of the literature on teaching suggests that there *is* a national teaching style, but it is very different from the goals of present performance-based teacher training programs. It represents a normative conception of teaching which directly conflicts with the technical concepts of teaching underlying most performance-based approaches.

The homogeneity of teaching styles, combined with the relative homogeneity of curricula and school organization patterns, indicates that teaching has been a normative rather than a technical activity. That is, teachers have been behaving according to a normative concept about what teaching is, and they consequently look similar when they are at work. A technical concept of teaching defines teaching as decision-making skills and teaching strategies which the teacher applies to each teaching situation. When he does this, the results vary greatly, for his decisions are different in every case and his strategies vary as a consequence.

Performance-oriented education has to be built on the assumption that teaching is a technical matter--a process of decision making, interacting with children, developing content, etc. The clustering of teaching behavior around identifiable norms suggests that it has been an intuitive, imitative act.

Probably the implementation of performance-based education will require the socialization of the education profession into a technical stance which is foreign to the norms of contemporary practice.

WHAT WOULD BE THE NATURE OF A COMPREHENSIVE COMPETENCY-BASED TRAINING SYSTEM?

From the experiments and from software testing, it appears that it is feasible to train teachers to a considerable variety of decision-making skills and teaching skills and strategies. What is not clear is whether we can build a complex training program comprehensive enough to prepare a teacher for the full role of classroom teacher or even more limited specialized roles.

WHAT WOULD BE THE NATURE OF A COMPETENCY-BASED TEACHER CENTER?

The function of a competency-based teacher center within an educational area (a complex of schools serving a defined geographic area) would be to provide three types of flexible teacher education support to the educational effort: a) general support through training to improve teacher competence without defined teacher roles, b) flexible support to teachers by helping them diagnose their performance and receive training to increase specific competencies in terms of their needs, and c) support to innovative efforts within the area.

To fulfill these missions, a teacher center will have to develop a combination of precision and flexibility which probably cannot be obtained without the magnitude of effort required to create a comprehensive teacher education program.

Each of the three missions of a teacher center requires diagnostic capability; a flexible modular training system; and a management system for relating the two, monitoring effectiveness, and organizing program revision.

A teacher center need not offer all possible services but could be developed to accomplish limited training objectives or types of training support within the three types of mission; but, even in a limited center, precision of diagnosis, training, and management would require a complete system of interrelated diagnostic, training, and management functions.

Thus the effectiveness of a center will depend on the definition of working models of the teacher or aspects of teacher performance and the development of training systems to bring about competence within the models of performance.

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An abstract of "In-service Training of Teachers as Behavior Modifiers: Review and Analysis," by Herbert Todd Eachus

SUMMARY

Herein are discussed the relationship of in-service training to behavior modification techniques, including operant technology, control of behavior, verbal behavior controlled by directly observable events, and environmental variables; principles of behavior, including positive reinforcement, punishment, conditioned reinforcement, extinction, shaping, activities as reinforcers, "time out," fading, and self-management; teacher behaviors measured by changes in children, including the criterion involved and the interplay between teachers as students and students as teachers; materials for teacher training, including those in print and those on film; and programs for teacher training, including both general and special programs.

ERIC DESCRIPTORS

*Behavior Change
*Behavior Development
*Inservice Teacher Education
*Instructional Materials
*Teacher Behavior
Student Teacher Relationship

THE TASK

With respect to teacher training models based on behavior modification techniques, what components of these new techniques have been shown to be successful? What procedures are most appropriate for development of these components?

INTRODUCTION

In-Service Training

The design and conduct of training activities for teachers who are working in the classroom have become in recent years a widespread, complex, and formidable enterprise. Yet even with the increased number of innovations introduced to the field of teacher training, whether at the preservice or in-service level, little evidence exists to show what effects training of any kind has on the teacher's ability to foster changes in pupils. Moreover, the question of whether a teacher can do things which result in changes in children is not answered directly by the research evidence derived from studies of teacher training. This applies generally to both preservice and in-service training programs.

Operant Technology

The terms "radical behaviorist" and "behavior modifier" apply to individuals engaged in basic or applied research activities or employed in therapeutic or educational settings who subscribe to the approach and methods for analyzing behavior which are commonly connected with B. F. Skinner (18-22).

Control of Behavior

The most commonly described feature of radical behaviorism is the concern with the control of behavior. The primary activity involved in describing behavioral control is searching for events which are related to behavior in some way.

Verbal Behavior Controlled by Directly Observable Events

It is important at this point to present the definition of "verbal behavior" as a subset of events within the category "behavior."

The Importance of Environmental Variables

The concern with the environment that characterizes the radical behaviorist derives initially from a very practical source. First, verbal behavior is controlled by events in the environment to some extent. Secondly, "any manipulation inevitably consists of some change in the environment of the person whose behavior is to be affected, and one has little reason to expect a manipulation to be successful, unless it reflects some functional relation between behavior and the relevant environmental change" (5).

Radical behaviorism, or "behavior modification" as the approach is called when applied to a clinical or educational setting, offers "a set of concepts and principles derived from an experimental analysis of behavior, a definite procedure for the application of these concepts and principles to education, a research method which concentrates on the individual child and the philosophy of science which encourages a search for observable causes" (3).

Operant technology, behavior modification, or radical behaviorism represents an empirically based, internally consistent approach to the study of human behavior. The almost self-imposed isolation of radical behaviorists from others within psychology is virtually complete and is increasing yearly.

PRINCIPLES OF BEHAVIOR

The principles of behavior management are positive reinforcement, punishment, conditioned reinforcement, extinction, shaping, activities as reinforcers, time out, fading, and self-management.

Positive reinforcement. A behavior which results in the occurrence of an event which is then followed by an increase in the frequency of the behavior is said to have been positively reinforced.

Punishment. Punishment is said to occur when the frequency of a given operant decreases as a result of the contingent occurence of an event.

Conditioned reinforcement. There are many imaginable events whose occurrence would have no effect on behavior. However, if such a neutral event is paired with (presented at the same time with) another event which does have the effect of reinforcing or punishing a behavior, the neutral event will assume punishing or reinforcing properties. When such an event assumes properties of a controlling variable, it is called a conditioned reinforcer or a conditioned punisher.

Extinction. The termination of reinforcement and its effect on behavior is called extinction.

Shaping. Shaping is a sequential set of response differentiations brought under the control of a positive reinforcer. Teaching can thus be described as a continuing process of shaping operant behavior.

Activities as reinforcers. The Premack principle is as follows: "Reinforcement results when an R (response) of a lower independent rate coincides, within temporal limits, with the stimuli governing the occurrence of an R of a higher independent rate" (14).

This principle is of major concern in the analysis of teaching. Quite possibly, children of 8 or 9 years of age when placed in or around the school will do things such as play in a sandbox, on a swing, etc. more often than they will read a book, write answers, etc. What the Premack principle says is that those activities which occur independently with high frequency can be used as consequences for behaviors which occur with lower frequencies.

Time-out. Time-out is defined as time during which the organism characteristically does not engage in behavior being studied. Time-outs are used as probes, markers, and a series of events; it is a method of eliminating the effects of earlier behavior.

Time-out differs from extinction in that when extinction is applied, the only change that occurs in the environment of the child is the absence or discontinuance of a given reinforcing stimulus. In time-out, the child is removed from the environment where the occurrence of reinforcing events is possible.

Fading. A second procedure for establishing new discriminated verbal operants in the classroom which efficiently accomplishes what shaping does is the use of prompts and their fading. "A prompt is a previously taught task signal that the teacher can use to get a specified response to occur in the presence of a new task signal. It is a signal that will eventually be faded out" (2). A prompt is presented with a "natural" cue and is then gradually withdrawn as the new response is maintained. The gradual withdrawing of the supporting cues for successful behavior is called "fading."

Fading is an integral part of teaching procedures which are designed to result in successful student performance without extensive external support. Effective fading involves turning control of a student's behavior over to the available consequences inherent in the performance of tasks.

Self-management. There is always a goal or terminal objective for the instructional process that has as its primary concern the generation of self-managed, self-controlled behavior on the part of the individual students. Self-control can be directly taught by arranging contingencies which make it likely that an individual will more closely examine the variables affecting his behavior which can be seen directly and, of those, variables which are available for observation by the individual and himself and to no one else.

TEACHER BEHAVIORS MEASURED BY CHANGES IN CHILDREN

In all the instances in which operant procedures have been applied to educational settings, whether concerned with teacher training or with changes in children, the effectiveness or efficiency with which an individual teaches a student has been measured in terms of the changes produced in the student.

The Criterion

The criteria base which would be used to determine teacher effectiveness by a radical behaviorist would center on determining things such as whether a teacher can establish virtually error-free performance on the part of students; whether the tasks set for students by the teacher are presented in an orderly sequential fashion leading to some identifiable end point; and perhaps, finally, whether the teacher keeps accurate and consistent records of students' performances so that contingencies can be rearranged when control over given behavior is not achieved.

Teachers as Students--Students as Teachers

Any time we deal with the change of one individual's behavior due to the arrangement of contingencies by another individual, both parties undergo behavior change in time. The circumstances under which a teacher emits praise or approval for the student behavior are those which also act to reinforce whatever teacher behavior immediately preceded them.

Very seldom in in-service training programs are children used as an integral part of the training procedures for teachers. However, children represent a primary source of corrective data for the activities of teachers. In a very real sense, children should function as "teachers" for teaching personnel undergoing additional training. If children can serve as sources of information, teachers can serve as learners in the same sense.

MATERIALS FOR TEACHER TRAINING

The materials that are available for use on an in-service basis for teachers concerned with the analysis of behavior fall into two categories--print and film. Available works are described below.

Print

One textbook for the experimental analysis of behavior is *Behavior Principles* by Ferster and Perrott (6). The terminal objective for the text is verbal mastery of operant technology.

Another book available for in-service training programs is *The Technology of Teaching* by B. F. Skinner (21). This book, unlike Ferster and Perrott's, was not designed specifically as an instructional program. It does contain, however, treatments of important moral, ethical, and philosophical issues.

A short but effective program has been prepared by Peterson and Gullion (13). Their book, entitled *Living with Children*, is prepared as a linear program.

There is a new instructional text for teachers in the nature and use of behavior modification: *Teaching: A Course in Applied Psychology* by Becker, Engelmann, and Thomas (2).

Another short programmed text which has been prepared specifically for use by teachers is that of Buckley and Walker (4) called *Modifying Classroom Behavior: A Manual of Procedures for Classroom Teachers*.

Homme has recently prepared an instructional program for teachers on the use of activities as reinforcers in the classroom. This book, called *How to Use Contingency Contracting in the Classroom*, is by Homme, Csanyi, Gonzales, and Rechs (7).

The system of applying behavior principles to teaching developed by Ogden Lindsley is called "precision teaching." A recent book presents a training sequence in this system: *Precision Teaching: An Initial Training Sequence*, edited by Kunzelmann (8).

Film

The several films available are all of high quality and are designed to be used as instructional materials. Because they deal mostly with handicapped or deprived children, teachers sometimes object that the procedures are not applicable to their particular setting. This objection is readily overcome by stressing the generalizable nature of the procedures. However, films are needed to deal with "normal" classroom situations. It is expected that such films will be available in the very near future.

The films now available include a basic introduction to behavior principles provided in an outstanding series of four films written and directed by Ellen P. Reese. The series is entitled *Behavior Theory in Practice* (15).

The most useful film available for use in in-service teacher training programs is *Born to Succeed: Behavioral Procedures for Education* (16).

Another film demonstrating basic procedures involved in learning, discrimination, and superstition has been prepared by Reese and B. F. Skinner. It is called *A Demonstration of Behavioral Processes by B.F. Skinner* (17).

The film which presents the most complex and longest application of behavior principles to instructional processes is *Behavioral Modification: Teaching Language to Psychotic Children* (10). This film documents the remarkable work of O. Ivar Lovaas with psychotic children at the University of California at Los Angeles Neuropsychiatric Hospital.

The final film is *Rewards and Reinforcements in Learning* prepared by Meyerson, Kerr, and Lazar (12). The use of behavior modification procedures in four individual cases and in two group settings is shown.

PROGRAMS FOR TEACHER TRAINING

Before presenting a sample of teacher training programs in existence, we should discuss the questions of when a teacher requires such training and what the criteria of training effectiveness can be. To begin with, in-service training should be applied on the basis of diagnosed teaching deficiency and not applied in a wholesale, blanket fashion. As for assessment of the effects of such training, the criteria which are used by researchers may not be entirely suitable for evaluation from an administrative point of view in schools; however, there does seem to be close correspondence between the requirements for a good research study and the information needed to determine the effectiveness of classroom procedures.

General Training Programs

Lindsley (9) has established a training program based on his precision teaching system. It is designed for supervisory personnel so that they can return to their positions following training and, themselves, construct training programs specially suited for the individuals and physical setting in their schools. Each participant in the trainers' short course receives a complete kit of materials needed to train 10 teachers. The program is 4 days long and covers a wide variety of topics.

Another general program which includes those elements of behavior modification omitted from the precision teaching system is that offered by the Columbus State Institute (1) on an annual basis. The range of topics covered by the general program in the Columbus State format is quite wide: behavior modification is applied to institutions, the community, psychotic children and adults, and mentally retarded children and adults.

Another type of general training program format is the holding of short-term workshops directly in schools, which is typified by McIntyre's experiences (11). Such short-term workshops provide training in behavior modification which can be applied immediately to the teacher's classroom environment.

Another form of in-service training program is represented in summer institutes conducted on specific topics for restricted audiences of teachers. There is little evidence to indicate that these institutes are responsible for any major long-term changes in the behavior of the teachers who attend them. What is suggested is that this form of in-service training be accomplished by short-term in-service workshops help periodically during the academic year following the summer institute.

Because of the large number of requests for in-service training in the area of behavior modification, attempts are being made to develop automated instructional packages which do not require special personnel or large expenditure of funds in order to accomplish the training.

Special Training Program Development--A Case Study

The matter of designing a program to meet particular needs of a single teacher or a state-wide system requires careful planning. This section presents a case study in the design of a workshop for a state-wide program of deaf education.

SUMMARY

The growth of a technology of behavior in the laboratory has led to the development of an applied technology of behavior. The rapid expansion of research efforts by operant technologists during the early and middle sixties included the processes of instruction along with therapy and the home as sources for their experimental analyses of behavior. Because of the precise empirical data upon which functional relationships between behavior and the environment were based, early attempts to apply directly principles of behavior were very successful.

The relatively few psychologists engaged in the application of principles of behavior have been joined by growing numbers of professionals in other disciplines, particularly education. A few advanced textbooks on operant technology have been joined by a growing number of programmed texts and films in order that teachers and other members of helping professions can obtain skills in behavior modification procedures quickly and easily.

The rapid growth of behavior modification studies and applications has encouraged certain individuals to concentrate applied techniques on certain sets of behavior principles. The growth is particularly exciting since at the base of every experimental investigation, model classroom, and recently trained teacher is the positive outcome of some child's improvement.

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An abstract of "Preparing Teachers to Teach Brunerian Curricula," by William Johnson

SUMMARY

Herein are discussed the relationship of Brunerian methodology to teacher training models; some attempts to implement Bruner's model of the relationship of school tasks to cognitive levels, grade placement of material, inquiry learning, motivation, and audiovisual efforts; and the preparation of teachers for the new curricula, the preparation of teachers to teach the new curricula, and the preparation of the teachers of teachers for the new curricula.

ERIC DESCRIPTORS

*Curriculum Development
*Educational Development
*Educational Methods
*Methodology
*Teacher Education

THE TASK

With respect to teacher training models based on Brunerian methodology, what components of these techniques have been shown to be successful? What procedures are most appropriate for development of these components?

INTRODUCTION

Subsequent to Sputnik in the late 1950s, the task of relating public disillusionment with the schools to innovative curriculum procedures fell to Jerome S. Bruner.

In *The Process of Education* (6), Bruner strikes four themes. He stresses the importance of structure, which can be defined as an interlocking set of ideas, principles, concepts, etc. and an appropriate method of inquiry. Next, he stresses the importance of readiness, which he visualizes as levels of cognition after Piaget, and he gives special attention to two levels: concrete and formal. Intuitive thinking is endorsed as being similar to the kind of reasoning used by scholars during inquiry. Finally, the importance of intrinsic motivation is stressed: learners should find joy in learning if they are to persist past the awarding of the final grade in a course. He closes with a short statement on audiovisual instruction which he sees as valuable when it facilitates inquiry.

Little is said in *The Process of Education* about the preparation of teachers. We can make some inferences, however, from what was said about curriculum and learning. First of all, to teach curricula built on Bruner's model teachers would have to be well informed in the discipline or disciplines they are teaching. Teachers cannot teach a knowledge of structure they themselves do not possess. Since structural knowledge requires more than a group of the specifics in a text, we infer that he meant that teachers should be thoroughly prepared in subjects they teach.

We also infer a necessity for a rather thorough knowledge and understanding of developmental psychology, especially Piaget's levels of cognition. Rather obviously, teachers would also have to understand the behavioral cues associated with levels of cognition. Thus, teachers would have to be clinicians as well as scholars.

As Bruner points out, analytical thinking is rulebound and produces fairly predictable results. Intuitive thinking *is* not and *does* not. To teach Brunerian curricula, teachers will also have to be skilled inquirers and skilled in helping others inquire.

Finally, teachers will have to be enthusiastic about learning and inquiry if they are to model desirable behavior. If inquiry is not perceived as rewarding for the teachers, why would children wish to become inquirers?

In the decade that has past, much work has been done with Bruner's concepts of curriculum and instruction. Some of the work will be reviewed in this paper. The paper is divided into two parts. Part one deals with studies that in some way evaluate Bruner's four thematic conceptualizations. In part two, studies dealing with attempts to prepare teachers to use curricula developed on the Bruner model will be reviewed.

SOME ATTEMPTS TO IMPLEMENT BRUNER'S MODEL OF CURRICULUM AND INSTRUCTION

Discipline Structures

Structured approaches to English. Structured approaches to the teaching of English have been formulated and tested. The formulations usually have included three content elements: literature, composition, and language or grammar. According to Carlsen and Crow (9), the approaches faithfully articulate a point of view. That point of view stresses inductive methods and English as a discipline to be studied for its own sake. Those conducting empirical studies found some support for these formulations.

Structured approaches to mathematics. From the few studies in this field, little can be concluded. Bruner's ideas have been tried and found popular, at least in the form taken by the Patterns in Arithmetic (41).

Structured approaches to science. From Gong's analysis (14) we conclude that Bruner's ideas of structure, inquiry, readiness, and motivation were faithfully expressed in the new science curricula. The findings of the empirical studies suggest that instructed groups learn better than uninstructed groups, but that differences in content organization had little effect on outcomes.

Structured approaches to social studies. While interest in curriculum reform of the kind suggested by Bruner has been found in the social studies, it has been less universally embraced than in English, mathematics, and science. The criticisms of Anthony (2) and Krug (22) could be matched by others. The Stanford studies (10,17,23,28,30) suggest at least some interest in alternate models. Studies designed to determine the effectiveness of Brunerian curricula produced mixed results. Of particular interest are the works of MacDonald (25) and Abramson (1), who studied the processes of curriculum development.

School Tasks and Cognitive Levels

A number of studies has been conducted to determine the effects of conceptual readiness levels as defined by Bruner and Piaget on accomplishing various grade tasks. Collectively, these studies support the contention of Bruner and Piaget that readiness is related to developmental conceptual levels. From these data it seems imperative that teachers become aware of conceptual levels, learn the relevant cues, and develop appropriate responses.

Grade Placement of Material

Mindful of Bruner's claim that anything could be taught to any age group at some level of cognition are Eroh (12), Rupley (36), Potterfield (32), and Joyce and Weinberg (20). Their studies lend general support to Bruner's claim. In them, learners acquired facility with measurement, anthropology, sociology, and mathematics long before these topics were encountered in the curricula of the 1950s.

Inquiry Learning and Teaching

A central concern of investigators working with Brunerian models of teaching and learning is inquiry. Suchman (40) has formulated a widely accepted concept of inquiry and conducted an extensive in-service teacher education program with inquiry methods.

Inquiry procedures evaluated. Most of the studies seeking to establish inquiry procedures are of a two-group design: inquiry versus traditional instruction or inquiry versus no instruction. Others compare a group of variables, often two or more inquiry approaches, with a traditional instruction control group or none at all.

From the studies it is difficult to make an unambiguous case for inquiry or discovery learning. It often does seem to produce superior performance on a transfer task, and it sometimes promotes retention. Inquiry-discovery approaches are acknowledged to be more time consuming. Traditional or didactic approaches are generally agreed to be less time consuming and to produce superior immediate learning. If didactic learning is meaningful, that is, if the learners can fit it easily into their cognitive structures, traditional teaching produces equivalent results.

Perhaps the situation is best described by Romberg who characterizes recent research in mathematics education as "large in quantity, poor but improving in quality, and diverse" (34).

It might be more productive to ask what approach will produce desired results with a particular group of learners possessing specific characteristics than to ask which method is superior. Methods are means to achieve ends, and none are inherently superior: superiority depends on a number of learner and content variables.

Research relevant to aspects of inquiry. Suchman (40) identifies four processes associated with inquiry. They are searching, data processing, discovery, and verification. In this section are grouped studies that appear to be relevant to one or another of three of those processes.

Searching. Suchman identifies four variables relevant to search behavior. They are ability, manipulation, perceptual set, and organizational patterns. The studies done in this area do not support his formulation of searching behavior. There have been differences in inquiry outcomes for learners of varying intellectual and personal characteristics. Set, manipulation, and organizational patterns did not seem to have noticeable effects on inquiry. No final judgment can be rendered because little work appears to have been done.

Data processing. Several studies consider ways in which learners process data. From these studies it appears that learners do use strategies in organizing data. It appears that strategies can be taught and that practice with a strategy improves performance.

Discovery. Not enough work has been done with conditions that promote discovery. Baughman (3) has established criteria useful in developing or evaluating materials designed to promote heuristic thinking. Marin (27) has not found open-ended science experiments superior in teaching concepts, laboratory performance, and problem solving.

A fundamental teacher manipulation is questioning. One would presume that inquiry teachers would use more higher-order questions. Pfeiffer and Davis (31) have found that teachers ask a disproportionate share of lower cognitive questions. We presume that little inquiry was being conducted. Butts and Jones (8) have been successful in teaching an inquiry process, and Wilson (43) has found a wanted-given strategy superior for mathematics problem solving. Guidance during problem solving has been found to be important by Salstrom (37). Apparently pupils can be taught to inquire, and some specific teacher manipulations were found to be productive.

Motivation

Motivation does not seem to have received the same degree of attention as other facets of Bruner's formulation. It has certainly received less attention than problem solving and inquiry.

To the degree that the studies here reflect the field of motivation we can only conclude that individual pupil and teacher differences are still a prime factor in school learning. Perhaps Diamond's study (11) relates most directly, in that she compares ability groups and traditional and Bruner-like science students. She has found a multiplicity of differences, not all favoring the Bruner-like program. Similarly, Boyle (4) has found that motivation was not an either/or matter of instrinsic versus extrinsic but rather that the two approaches have complementary effects. Hardin's results (15) buttress the general conclusion that motivation is multifaceted. In that study, pupils saw affective factors as paramount, but teachers tended to stress intellectual factors. The other studies illustrate alternate views of motivation and related matters.

Audiovisual Instruction

Early it became apparent that our topic encompassed too many complex facets to be adequately handled. Consequently, less emphasis has been placed on audiovisual means, to which Bruner assigned a facilitative rather than a central role.

Little can be concluded from the studies in this field. No evidence is reported that refutes Bruner's assertions concerning media. The two studies dealing with simulation report familiar findings. Simulated experiences stimulate participation but do not produce superior learning on conventional measures. Programmatic approaches to teaching have been found productive by Olton and his associates (29) and many other investigators. Haynes (16) and Lichtenberg and Fenton (24) remind us that media must be properly used to be effective. Finally, Prylock's conceptualization (33) of media as requiring inductive processes should encourage its continued use with inquiry approaches to education.

Conclusion

Bruner's formulation for reform of curriculum and instruction involves four basic elements: structure, readiness, inquiry, and motivation. It would not be possible to catalog all of the curricula produced during the Bruner decade that purport to employ a structured approach. [illegible] have seen in this summary, structure is variously defined, and not infrequently it is impossible to know how the reporter is defining it.

As is the usual case, little evaluative research has been conducted. Most of the reports include statements concerning perceived reception of the innovative curriculum. We have no way of knowing if these perceptions are self-fulfilling. When data have been collected, the studies usually include generalized evaluative assessments, which are almost invariably supportive. The new, it seems, is always better than the familiar.

When comparative data have been obtained, the situation becomes less clear. Often the structured product produces better results according to some measure--the measure generally being the invention of the investigator. Insufficient details concerning evaluative instruments cause one to accept such results with reservations. Often standardized tests have been used. When they have been significant, differences have been harder to find; but then, these tests generally measure goals other than those sought by authors of structured curricula.

We can seldom determine the degree to which an innovative program has been actually implemented. Has the innovative approach been given a fair trial? is always an important question. An equally important question involves the other methods: Are they fairly represented in the comparative test?

Data have been found to support some of the new curricula. The structural concept does provide a workable test for what should be included in a program of study, thus helping the profession avoid the "content clutter" that too often obscures what is valuable in conventional courses.

The notion of readiness does seem to have worked out. Young children have been successfully instructed in a wide variety of topics.

It seems that learner readiness is more dependent upon how something is presented than upon the inherent complexity of the idea at its ultimate level of sophistication. This finding leaves open the question of what should be taught to young children.

The topic of inquiry has received enormous attention. Inquiry, variously defined, has been compared to every imaginable method of teaching with mixed results. Inquiry procedures often produce superior transfer learning as claimed by Bruner and many others, but not always. Suchman (40) conducted the most elaborate study of inquiry and obtained ambiguous results. Factors relevant to individual learner and teacher differences and content variables seem to confound the question. With regard to these issues the findings of Bruce (5) seem relevant.

Bruce agrees with an earlier study of Burnett that there is a "scarcity of research findings leading toward sound modifications of practice in science education" (7:415). Bruce notes a persistence in promoting one type of teacher behavior when evidence suggests a relationship between kinds of learning and various patterns of teacher behavior. Other studies indicate that college study of science does not increase critical thinking nor understanding of science and that qualified science teachers and scientists do not differ in their understanding of science. The relationship between teacher behavior and pupil achievement appears to be stronger than the relationship between teachers' science background and pupil achievement. Also, students trained to observe themselves adopt nondirective teaching procedures more easily than untrained students. (Apparently one can sensitize students to behavior that correlates with desired pupil outcomes.)

The question of motivation is even more complex. Bruner poses either/or alternatives. Motivation is seen as either intrinsic or extrinsic, that is, good or bad. The real state of affairs appears to be much more complex. Pupils learn and learn well for all sorts of reasons, even accidentally. Here again the complexities of individual differences play a critical role. The chemistry between teacher and learner appears to be most critical. An inspired teacher can produce superior learning, and the learning is just as good as when it results from enormous learner interest in the topic.

In closing this part, it seems appropriate to note a remark made by Klausmeier (21) in reviewing Bruner and others. Klausmeier observes that Bruner's writing is persuasive, provocative, and bold and that he has a "disposition to generalize well beyond the experimental data." Perhaps that is what Bruner did in *The Process of Education*.

PREPARING TEACHERS FOR THE NEW CURRICULA

Developers of the new curricula, that is, curricula built on the Bruner model, realized early that steps had to be taken to prepare teachers to teach it properly. In this part, we will examine numerous programs that have had teacher preparation as an important element.

Included will be consideration of preservice, in-service, and institute programs. Most of them have been tied in some fashion to one of the new curricula or to one or more goals of the new curricula such as inquiry.

Instituting New Curricula

Instituting new programs. Authors of articles reviewed in this section describe programs undertaken to prepare teachers for curriculum innovation. Considered in chronological order, one can perceive in these programs considerable increase in sophistication. Moreover, the two regional studies demonstrate that something can be done on a less-than-national scale even though both projects enjoy outside help. They lend support to Schneider's call (38) for material relevant to pupils in a particular locale. And Johansen (19) concludes that teacher participation in, or perception of influence on, curriculum making significantly increases the likelihood of teacher implementation.

Changes in teacher education. Not surprisingly, some investigators call for fundamental changes in teacher education. R. B. Smith (39), for instance, calls for a shift in teacher education that would complement the major shift in the new curricula, that is, a shift away from categorized information to an emphasis on inquiry.

Program guidelines. Two investigators report guidelines for program establishment. Jensen (18) identifies 23 guidelines found useful in in-service programs, while Mahan (26) describes 16 guidelines for perfecting curricular change.

Preparing Teachers to Teach the New Curricula

A large number of studies and reports deal with preparing teachers to teach the new curricula. These studies and articles vary greatly in complexity. Most featured a single treatment, often an institute or workshop. Others are comparatively sophisticated in that a single treatment is compared to a central group or to other treatments.

These conclusions can be drawn: Teachers learn what they are taught. They learn best when instruction is well defined and illustrated with films, telecasts, or demonstrations. Direct instruction in desired behaviors is more effective than instruction in related topics. Monitoring devices such as interaction analysis are valuable in helping teachers alter their behavior. Finally, some methods are better for some teachers, but the realities of individual differences work with teachers as with pupils in the common schools.

Preparing Teachers of Teachers for the New Curricula

The studies summarized in this last section deal with the in-service education of the teachers of teachers.

Little can be concluded from the studies in this area. The workshops of the sort reported by Rowe (35) and Girault (3) seem to have produced results. The postworkshop activities of the participants have been monitored and complementary activities reported. Apparently these behavior-oriented workshops have had a positive effect on the participants.

The effects of the several reports clustered under the label "multiplier"--a small group teaches a larger group which in turn is expected to teach a still larger group--are less well documented. We only know that the programs have been conducted. In no case has any data been presented to document the effect on other teachers or learners of the training received in these programs. But then, teacher education has operated in a data vacuum for decades; these investigators at least have reported their programs.

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An abstract of "British
Primary Education: Components of
Innovation," by Philip Woodruff

SUMMARY

Herein are discussed the reactions of visitors to the Oxfordshire schools; the new elements common to education in all the Oxfordshire schools, including vertical grouping, "unstreaming," open education, the integrated day, and the integrated curriculum; the role of the teachers in Oxfordshire's primary schools; the role of various agencies and institutions in the Oxfordshire primary schools, including the advisory service, Her Majesty's Inspectors, the museum service, the teachers' centers, and the Schools Council; and the lessons for American education that can be drawn from Oxfordshire's primary schools.

ERIC DESCRIPTORS

*Educational Innovation
*Educational Programs
*International Education
*Open Education
*Primary Education
Agency Role
Teacher Role

PREFACE

Readers should understand, at the outset, that the information contained in this report was gathered from firsthand observation and from interviews with English educators in Oxfordshire during the summer of 1971. In no way do I wish to suggest that what is true of Oxfordshire schools is true of all English county schools or the schools of the West Riding, of Yorkshire, Leicestershire, or Bristol--schools referred to by many Oxford educators as being innovative.

THE TASK

With respect to British infant schools, what components have been shown to be successful? What procedures are most appropriate for development of these components?

QUALITY OF LIFE AND LEARNING

Most visitors to these Oxfordshire schools, as to other such schools in Leicestershire or Bristol or elsewhere in Britain, do agree that the quality of life for English children has truly changed. Not all would agree that the change, as a concomitant to an improvement in the way of life for children in schools, has necessarily resulted in an improvement in the quality of learning. Champions of the new modes of British education for children, including many visiting Americans, share in varying degrees the view that the elusive and continuously emerging qualities of each child's individuality do not admit of values accruing to a prescribed curriculum. Those who express skepticism of the new modes of education in British schools do so, not because they are unaware of the values in humanistic, individualized schools, but because they maintain the conviction that schools are organized to teach something which children should learn.

ELEMENTS OF OPEN, INTEGRATED-DAY EDUCATION

Many Oxfordshire primary schools are good examples of open, integrated-day education, but no one school is like another in the manner in which it manifests openness and integration. There are differences among all the schools; yet they also share common elements.

Vertical Grouping

In an infant classroom there may be as many as 40 children between the ages of 5 and 7+. Typically these children will remain together with the same infant teacher for 2 years before moving on to the junior stage of school. The infant school encompasses the ages of 5 to 7+, the junior school taking over from 7 to 11+.

"Unstreaming"

Streaming has something of a counterpart in the American practice of ability grouping, but British streaming, with selection examinations at 7 and until recently 11+ years of age, may have been more of a determinant of the pupil's educational direction and future than American ability grouping. Now, in the early 1970s, it would seem that streaming in Oxfordshire schools has ceased to be a major feature of primary education. The Plowden report's conclusion indicates the favorable view taken of unstreaming: "Schools which treat children individually accept unstreaming throughout the whole school. When such an organization is established with conviction and put into effect with skill, it produces a happy school and an atmosphere conducive to learning" (2:819).

With streaming eliminated, vertical grouping comes into play as a way of providing classes with young people who, in self-selecting groups, can learn from their classmates what it is that classmates can teach by word or example or demonstration. The teacher is then left free to do those things only she can do or those things which she does best.

Open Education

R. S. Barth has said:

> Open education is a way of thinking about children, about learning and about knowledge; it is characterized by openness. There is a physical openness of schools. Doors are ajar, children come and go in the space within the school and without. Classrooms are open and children bring objects of interest to them in and take objects of interest out. Space in the open classroom is not preempted by desks and chairs organized in rows or in any other way. There is a variety of spaces filled with a variety of materials. Children move in this openness from place to place, from activity to activity. Both the world inside and outside of the school is accessible to them. Space is fluid and changes with changing needs. The curriculum is open . . . open to choices by adults and by children as a function of the interests of children. The curriculum is the dependent variable upon which the child must depend. [6:10]

Openness, as related to primary education, is part of a larger picture having to do with significantly changed educational aims and the relationship between these and the fulfillment of society's goals. The main goal is far less that of producing from schools "good citizens," which implies a kind of mass conformity to established societal norms, and far more that of providing a changing society with personally competent, creative, secure individuals who may continue to learn from their world.

The Integrated Day

Brown and Precious have described the integrated day as follows:

> The integrated day could be described as a school day which is combined into a whole and has the minimum of timetabling. Within this day there is time and opportunity in a planned educative environment for the social, intellectual, emotional, physical and esthetic growth of the child at his own rate of development. Our definition extends this day to encompass the whole life of the child during the six years of primary education. [1:12]

Yet Ieuan Lloyd has made a telling remark about the integrated day: "As with all freedom, if not carefully watched, its vices may become as numerous as its virtues" (4:26). In the swirl of activities of an apparently unstructured day, it may be terribly easy for teachers and pupils to lose sight of the educational goals which are the purposes of the school. As a preventive against educational meandering, a head teacher and his staff might draw up a statement of educational goals or other kinds of guides. However, the need for such guides cannot be presumed to be an indictment of the integrated day.

It is a basic tenet of open, integrated-day education that the child will make his curriculum from the environment around him. There is, in terms of the development of intellectual processes, no priority distinction to be drawn between work and play. Some open educators instead draw a different sort of distinction, that between natural and artificial environmental experiences from which children may learn. Educational hardware and equipment are regarded as being too structured, taking too much from the children or doing too much for them. Much more serious attention is paid to providing teachers and children with the materials from which they may construct the learning aids they need. Heads (principals) commonly expend three-fifths of their total annual educational budget for teaching supplies--raw materials rather than published or prepared kits. A teacher who prepares a learning setup for a child does it with a specific child in mind, not a subject matter to be learned, and thus the material teaches as the child works with it. It is this constant emphasis on the child and his learning that is so marked a part of the integrated day and the integrated classroom.

Since each child is, in this educational milieu, quite literally his own curriculum maker, setting the pace of his own achievements according to his own natural rhythms, his own individuality and stage of growth, there can be no failure. A consequence of this position is that threats and punishments have no place in open, integrated-day education. Indeed, in some respects, failures, mistakes, and errors are, if not courted, at least accepted as part of the learning process. The open educator places great emphasis on allowing children the time to become involved, to experience *process*.

The integrated curriculum, then, is not only an environment rich in opportunities for children to explore. It is also a set of premises about how children should work, how teachers should work with them; it is also a point of view towards knowledge itself. Fundamentally, it is that any specific thing can be studied, can be the subject of involvement--for the latter, to open educators, is what "study" in the school sense means--and that such study can be broadened to encompass a wide variety of specializations or disciplines. Children may come to see a leaf as a color, a botanical specimen, a geographical manifestation, an artistic shape, and so forth, but first and foremost for a child a leaf is a leaf, an object in nature. A child begins here. A sensitive teacher can use so slight a piece of a child's environment to stimulate inquiry and learning in all the areas mentioned and to elicit processes of imagination. Sensitively and intelligently, the teacher can see that each child weaves together experiences from the environment which, in totality, comprise the subject matter one would recognize, in part at least, in the more traditional classroom.

Yet there will still be direct teaching, times when a teacher sees that a child does, indeed, *work* at reading and writing; times when, with a small group of children, she will work with word building, spelling, etc. Periods such as these represent moments of consolidation of information, extension of interests, and probings for children, in which the teacher plays a part. They are also valuable opportunities for teachers to evaluate the progress of individual pupils.

It is sometimes alleged that children in open education are ill managed, without regard for learning, etc. It should be noted, by way of response, that there are good open education situations and poor ones, just as there are good and poor formal education situations. However, observers note that even in the poorest open educational situations, children still enjoy the warmth of close personal relationships and the unthreatened opportunity for personal growth. These situations are not positively harmful, as is not infrequently true of some poor formal educational situations.

The open education movement has now found its philosopher-theorist-scientist in Piaget. Yet open, integrated-day education has had a long slow development in England.

THE OPEN EDUCATORS

One must constantly bear in mind that the heart of this British educational innovation has been the classroom teacher and that it has been the strengths of the classroom teacher which have sustained and carried forward the innovative developments. As Coe says, "We don't work by saying to people, 'You've been wholly wrong for twenty or thirty years' because seldom is that so. If the work is a little old-fashioned, out-dated, meaningless to children, over-academic, all right. But we take what strengths are there. There will be strengths" (3).

Observers as well as the teachers themselves are agreed that open education, integrated-day teaching is more difficult than traditional teaching. Traditional teachers have a base of security and predictability in their work quite unknown to those who work in the open education, integrated-day mode. The Plowden report underscores this point: "The teacher who used to give set lessons could manage on a little knowledge and use it over and over again. Far more knowledge, both about subject matter and about how children learn, is called for in teachers who have continually to exercise judgement, to 'think on their feet,' to keep in mind long-term and short-term objectives" (2:875).

For the most part, the teachers who are described here as the open educators--the new breed of teachers--are not being produced by the teacher training colleges. Since colleges of education must supply teachers to a wide variety of schools, formal and informal, private as well as tax maintained, they have not been as free to develop training programs as they might have been if education in Britain were less diversified in character. Thus education and training programs prepare their graduates for what are, in effect, on-the-job finishing programs. However, nowadays neither a new teacher nor any of the older or more experienced colleagues she joins on a school staff is ever, in the limited sense of the word, "finished." Like all other aspects of modern life, education is changing and open education is far from a finished educational mode--its development continues. It is this continuous onward rush of change in all education and in open education that makes the change agent role of the head teacher and the advisory teacher so vitally important.

It is customary for Americans to think of head teachers as they do American school principals. And indeed, a head teacher has many burdensome administrative duties which he cannot neglect. Yet he is selected for his position not because of administrative ability, but because he is the best teacher around. And the English head enjoys a far greater autonomy than does the American principal. English schools are individual. There is no attempt made to formalize a system unity. The head is given a school and a staff to shape into the best possible instrumentality of education for children. How he does that is his business.

SUPPORTING GROUPS

The Advisory Service

In such a situation as has been described, the burden of responsibility for instruction, curriculum, and pupil achievement falls largely on the teacher, but with it goes trust in her ability to grow and faith in her accomplishments with children.

Some local education authorities--those in Oxfordshire among them--maintain an advisory service, a man or a body of men who have been successful teachers and frequently successful head teachers. These men are entrusted with the improvement of instruction and the development of curriculum within their system. They are not administrators, except in the most limited sense. They are teachers who visit schools, who discuss educational problems with heads and seek to aid the heads in the solution of problems, and who also visit and work with teachers in schools in the area assigned to them.

If head teachers are given the freedom to shape their schools as they will, developing for each school its own individuality in program and organization, the advisory service must supply the uniformity or standardization that may occur in program design and implementation. Without imposing a curriculum on a school and on teachers, the advisory team, working together and sharing a common philosophy and approach, can improve the skills of teachers; they can draw from teachers materials and methods which have proved to be successful and spread these through the workshops to other teachers in other schools. Additionally, the advisory teachers, by virtue of being somewhat more free to attend ministry workshops, can share with teachers in their district the results of curriculum developments emanating from other sources. Clearly, the advisory service is the single most important element in an innovation initiated locally. It is this service which forms a bond between one school and its endeavors and another and between one school and research and development groups; it also seeks to help the individual head teacher and his staff members improve on their own practice.

Her Majesty's Inspectors

HMIs, as they are called, are the national counterpart of the local advisers. Approximately 500 professional educators now fill these positions, each assigned to an area of the country and to the schools and training colleges in that area. There the HMIs consult with educational leaders, visit colleges and schools, hold and attend conferences, conduct educational workshops in concert with others, act in ways which will facilitate communication among various levels of schools and school officials, and encourage and help improvements come to British education. Until recently, HMIs were probably restraining influences on innovation. But, by and large, HMIs now fulfill the role of change agent more than at any previous time.

The Museum Service

Oxfordshire's school museum service came into existence as recently as 4 years ago. Its growth has been quite amazing and is a measure of the degree to which open, integrated-day education has taken hold. Open, integrated-day primary education places a high degree of value on reality--on things in the "natural" world, on things which represent man and his accomplishments, and on things which are beautiful as well. Because classrooms must provide a rich experiential base in a number of interest centers, the museum service is a rich trove of artifacts which the teacher can draw on to provide a valuable takeoff for a pupil's work.

Teachers' Centers

One of the basic conditions of teachers' centers in England is that they are social centers. For an urban teacher, a teachers' center may provide a common meeting ground for the social activities of teachers whose social lives might otherwise be limited. For a rural teacher, a teachers' center provides a gathering place to which teachers from numbers of communities can come to share common interests. In this social sense, teachers' centers are in the best tradition of the English pub.

A teachers' center is far more than a social center, however. The teachers' center is frequently envisioned as the locus of retraining teachers, although advisers generally contend that retraining or providing in-service education for primary teachers particularly is best carried on in their schools. One senses that there is a head-on role conflict emerging between the advisers and the teacher center leaders. The advisers see themselves in the active role of aiding teachers on location. The teacher center leaders are regarded by some as mere keepers of a building, but by others, as curriculum development leaders actively engaged in shaping curriculum and methodology. The conflict is far from resolved. As Vincent Rogers writes, "These centers seem to be in anything from an embryonic stage to a complete development stage, and argument is strong as to what they should provide" (5:280).

Teachers' centers are precisely that--organized and operated by teachers. An elected body of teachers organizes to develop a teachers' center and develops subcommittees, as needed, to oversee and initiate programs. In some centers, no center warden or leader may be hired; in others, the role of the leader may be implied by the title "warden," suggesting a keeper of the establishment more than an educational leader. Oxfordshire seems to have combined the role of passive administrator of the organization with the more active role of curriculum development leader.

In the development of these new institutions, two approaches may be taken. The first approach develops from the belief that administrators or supervisors lead teachers and that, but for such leadership, teachers would seldom bestir themselves to gain their own improvement. The other approach develops from the belief that administrators and supervisors, working in concert with teachers, can develop increased staff competencies and working relationships. My estimate of the matter is that the British have elected in favor of the second position and that they are willing to suffer the inconvenience, the confrontations, and the misunderstandings which may flow from an excess of democracy in professional affairs.

The Schools Council

The Schools Council for Curriculum and Examinations in London is one of the two major sources responsible for the enormous amount of innovation that has been taking place in England. This organization, born in 1964, has joined together the two essential ingredients of education: what students study and how to assess what they study.

The Schools Council is a creation of government, yet it is independent of any government. It has the official endorsement of government, yet it is an unofficial educational organization, unable and unwilling to impress itself or impose itself on any educational body or any teacher. Its own literature stresses time and again that its purposes are educational research and development in the service to teachers.

It is common for a head teacher, an official of the local education association, a college person, or a member of the department of education and science to take a 2- to 4-year leave to work with the Schools Council. There appears to be a very real desire to keep the Schools Council from developing its own self-perpetuating bureaucratic movement. The organization and operations of the Schools Council seem designed to maintain the traditional freedom and independence of the British teacher.

It is not too much to say that the Schools Council has become the primary agency linking those concerned with educational progress in Britain.

LESSONS FOR AMERICAN EDUCATION

What has been so dreadful in American public education, even in the best of schools, is the existence of the countless daily insults to the dignity, the individual worth, and the humanity of each child, each teacher, and each administrator. They are so many, so frequent, so pervasive that those who suffer the indignity of the insult come not to suffer at all but to accept these petty assaults on integrity and worth as a necessary and normal part of a system. What it all means is that we must give an entirely new level of regard to the teacher. The teacher can no longer be considered the bottom of the professional heap in terms of respect, dignity, and authority over the affairs of the professional life of the school. Demeaning controls placed on teachers and unreasonable demands made of teachers rob them of independence, intelligent actions, creativity, and imagination, thereby reducing much of what should be the most exciting part of professional life--teaching--of its joy. If we will have better education, formal or informal, we must give to teachers what we would have them give to children. Openness in education, with all that it implies, is not for children alone.

This attitudinal change must come to administrators and to supervisors, locally and nationally. It must spread throughout the educational scene, upward through the layers of administration in a system, into the ranks of those in colleges of education, into the state departments of education, and into the U.S. Office of Education. When we realize that most of the vast superstructure of American public education is made up of those who do not teach, and who have not taught for years, it seems a little wearisome to expect much improvement in education to come through the efforts of teachers who use the latest educational hardware, the most recent "teacher proof" curriculum, the most attractively retreaded set of commercial textbooks, or the latest in computerized scheduling--little or none of which the teacher has had a hand in making! American teachers watching British teachers see, not a remote and mechanistic approach to educational improvement, but people like themselves in charge of their own destiny. *That* is what excites American teachers.

If there is any single important lesson we may learn from the British, at this point, it is that we need not fear freedom.

Moreover, I believe that our British friends, if I listened to them attentively, tell us to focus more on the child and less on the things of education which surround the learning the child is supposed to do.

We need seriously to consider the use of tests in our teaching, especially standardized tests for the diagnosis of children's intelligence and abilities. As John Coe says, "Authorities which remove external examination pressures earliest are the ones that get better quality into their children's lives" (3).

We must revise our thinking about curriculum specialists, curriculum directors, or curriculum supervisors. Two things seem vitally important. First, we need many more of them in our school systems:

it is generally an undermanned role. And secondly, we need them in support of teachers in classrooms. Such curriculum people must, indeed, be our best teachers, and they must continue, in some manner, to teach.

We must probably reassign our training budgets in this country so that much more of our resources are given over to the in-service education of teachers than to the preservice education of would-be teachers. Moreover, it does not behoove us to place teacher retraining back in the same campus situation which so commonly ill-prepared teachers to begin with.

We must give some serious thought to the degree of control exercised over the minds of both teachers and pupils by the commercial enterprises which provide most of our classroom materials and hardware. Materials must serve teachers; not teachers, the materials.

We now address the central point in this concern for innovation: ultimately, it is not any kind of doctrine of open education which is important; it is what happens to teachers and to children. What supports and sustains creative teachers is what must concern us. It gives us the encouragement to hurry on with the task of rebuilding American public education.

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An abstract of "The Development
of New Instructional Models," by
Michael DeBloois

SUMMARY

Herein are discussed the identification of the components of an instructional model; and new instructional models, including nongraded schools, flexibly staffed schools, the multiunit school, the three-tiered school, the middle school, the school-within-a-school (house plan), the Parkway program, and the Leicestershire model (the British infant school or integrated-day model). An appendix of model emphases follows.

ERIC DESCRIPTORS

*Demonstration Programs
*Educational Development
*Educational Innovation
*Instructional Materials
*Instructional Programs
Nongraded System

THE TASK

What new instructional models are being developed?

INTRODUCTION

In the general area of in-service training and curriculum development a significant level of innovation occurred over the past decade. This study identifies and describes various new instructional models, interrelates the diverse components of the different models, and identifies a set of variables which are common to each of the new models.

IDENTIFYING THE COMPONENTS OF AN INSTRUCTIONAL MODEL

A model is a complete system, composed of many subsystems and components. Education subsystems also exist separately from an educational model and may be considered independently, but confusion results when they are considered parallel to complete models. What we need are some ground rules for reporting on new instructional models: the context is instruction, and the model should depict a system of instruction which is more or less complete.

NEW INSTRUCTIONAL MODELS

In this section eight new instructional models are identified and described. A checklist of model emphases is appended.

Nongraded Schools

The motivating force behind nongraded schools lies in the inherent inability of the graded school structure to provide for the human variability of its students. Typical of the graded structure are distinct categories of students and sequential and simultaneous movement of student groups. In contrast, the concept of nongradedness is based on a theory of continuous pupil progress.

Byerly (1) lists nine features which he determined to be common to almost all pilot nongraded programs.

1. Adjusting the skills taught and the instructional materials to the readiness of the individual child,
2. Eliminating grade barriers which prohibit the use of appropriate books,
3. Eliminating nonpromotion,
4. Increasing staff curriculum planning and program evaluation,
5. Increasing cooperative teaching ventures,
6. Using a greater variety of instructional materials,

7. Involving parents,

8. Developing new methods of reporting student progress, and

9. Increasing the administrative support of the instructional program.

Donald A. Erickson (4) adds to this list six criteria he developed for evaluating nongraded programs. His second and fifth criteria add a dimension to the concept which is crucial to an instructional model. By requiring within the concept a statement of performance objectives, and tying the evaluation of the program to those objectives, the element of accountability is introduced. Erickson's six criteria are a) a clear statement of instructional objectives, sequenced to cover the entire educational program; b) sufficient variety of instructional materials at different levels of sophistication; c) a staff with competencies in individualizing instruction; d) the use of grouping practices which are flexible enough to allow for easy movement; e) evaluation devices based on instructional objectives; and f) commitment to recognizing individual differences.

Flexibly Staffed Schools

From a paper by Corrigan, DeBloois, English, Olivero, Sharpes, and Stinnett (2), it appears that flexible staffing has a number of purposes. It individualizes instruction for children by bringing to the school setting new (or retrained) people who can diagram learning difficulties and prescribe solutions. It also makes the job of each person more rewarding, psychologically as well as financially, by establishing increased specialization of responsibilities. Fiscal rewards would be consistent with performance, not necessarily with longevity, as is the case with a single-salary schedule. It can avoid the evils of merit pay as conceived by the teachers' associations.

Moreover, flexible staffing establishes accountability and responsibility for teaching and learning. It creates conditions which force teacher education institutions to modify their approaches, making them more relevant, perhaps, to the needs of our time. And it changes the organizational structure of the school so that the power for decision making lies at the level where responsibility for the execution of decisions must take place, i.e., in the classroom.

Flexible staffing offers a career pattern for those teachers who wish to remain in the classroom rather than be promoted away from children into administration. It provides a career opportunity program for people who are poor through well-delineated career ladder and lattice arrangements. This may be one way to bring more closely together the home and the schools for common causes.

It will force a needed review in the certification and credentialing procedures and requirements. And it should convince the public of the need for increased fiscal support while existing resources are deployed.

While the early models focused almost entirely on structural aspects--role and salary differentiation--later models have begun to organize around the needs of the school or especially the student client. In many cases now, the *process* of flexible staffing, in which the individuals of a school adopt a new interpersonal style of interaction and allow a new staffing form to emerge, is considered equally as important as the *products* of structuring roles and salaries into vertical hierarchies.

One of the abiding criticisms of the flexible staffing model of instruction is that its main purpose lies outside the domain of the student. The concept grew out of an attempt to improve the lot of the teacher and has maintained that emphasis. In some cases the criticism is valid; in others, it is amiss.

The Multiunit School

Literature from the Wisconsin Research and Development Center for Cognitive Learning (5) describes the multiunit school instructional model as one which

1. Organizes for instruction and related administrative arrangements at the building and central office level;
2. Provides for educational and instructional decision making, open communication, and accountability;
3. Provides an in-service program including multimedia materials;
4. Offers a model of instructional programming for the individual student which is designed to provide for differences in children's rates and styles of learning, level of motivation, and other characteristics within the context of a school's educational objectives;
5. Provides a model for developing curriculum materials for a school staff implementing individually guided education;
6. Designs the development of measurement tools and evaluation procedures for preassessing children's learning readiness, for assessing the progress and final achievement of the student through criterion-referenced tests;
7. Provides feedback of all assessment data to the teacher and the child;
8. Provides curriculum materials, an objective pool, and criterion-referenced tests for schools with insufficient resources for developing their own;
9. Offers a program of home-school communications that reinforces the school's efforts by generating community interest and support;

10. Encourages facilitative environments in school buildings, school systems, state education agencies, and teacher education institutions;

11. Requires practical research from each participating school in order to design, implement, and evaluate instructional programs for individual students;

12. Replaces the age-graded, self-contained classroom with a nongraded instructional unit; and

13. Differentiates the teaching staff by adding the roles of unit leaders, teaching intern, teacher aide, and instructional secretary to the traditional staff teacher role.

The main function of each instructional unit within the multiunit structure is to plan, carry out, and evaluate the results of each student's instructional program.

The child in the multiunit school, ideally, will have a program designed for his exact complexity and pacing level.

Pellegrin's research (5) into three MUS-Es (multiunit schools) and three control schools in three Wisconsin school systems resulted in the following conclusions:

1. There is a superior recognition among MUS-E teachers of the vital role that planning plays in instruction. The five most important tasks of MUS-E teachers deal with specific types of planning and the preparation of instructional materials.

2. New specialization of labor emerges in the multiunit schools. Some teachers devote most of their time to individual pupils; others work with larger groups.

3. Unit leaders are the focal points of interaction in the units and serve as links between the teachers and the principal.

4. In the control schools, decision making affecting each classroom is generally the prerogative of individual teachers, who serve as primary decision makers, and the principal, who provides advice or sets limits. In the three MUS-Es, decisions are typically made by the unit staff in cooperation with the principal.

5. Job satisfaction and teacher morale are much higher in the MUS-E staff.

The Three-Tiered School

The model of instruction proposed for the three-tiered school is one of the few found in the literature which clearly was developed with the problems of the urban child in mind.

In tier one, skills and knowledge development are required. Tier two is the interest phase of the child's learning encounter--a phase in which he may explore freely and engage in activities ranging from playing the tuba to directing a play or doing extensive research in a topic of personal relevance. Here, the concern is frequently with identifying and developing talents associated with a choice of vocation. Tier three may be thought of as a group inquiry into the social realities imposing stress on the individual child, the issues and problems of social action which are a part of his everyday life. The objectives for this tier relate to issues of the child's personal identity, his connectedness with others, and the role which power plays in his social context. Tier three allows for a greater emphasis on the affective aspects of education than either of the other tiers.

In this model, an extended school day is proposed, in which school and out-of-school instructional centers are open at least 12 hours of the day, 6 and even 7 days a week. The basic organization and management of studies would normally find a place between the hours of 9 and 3, but once the child begins certain activities, he would not need to confine his attention to those pursuits within a school day. The staffing structure suggested by the three-tiered model is one of extensive horizontal differentiation.

The three-tiered school instructional model stresses the purpose of attitude development--the affective domain--more than any model reported. It is one of the few that identify the urban center as an out-of-class instructional center.

The Middle School

In the climate of confusion and dissatisfaction with the role being played by the junior high school, the concept of the middle school was born. The middle school concept, which has recently been a center of much attention, calls for the reinstatement of the 4-year high school and the establishment of a middle school between the elementary grades and the high school. The grade patterns most commonly suggested for the elementary school-middle school-high school progression are 5-3-4 (i.e., the first five grades comprise the elementary school; the next three, the middle school; and the final four, the high school), 4-4-4, and 6-2-4.

The shuffling around of grade clusters or the rechristening of the old junior high school in itself does not constitute a new model of instruction. Unfortunately a great many of the school districts claiming to have adopted the middle school concept are guilty of this self-deception.

This author was compelled to include the concept in this listing of new instructional models only after surveying the literature--done very reluctantly, due to the concept's dismal track record in the field--and finding there indeed is a comprehensive rationale for reorganizing the middle grades.

The National Education Association Educational Research Service (7) suggests distinguishing features of the middle school.

1. A span of at least three grades (including 6 and 7, with no grades below 5 or above 8) to allow for the gradual transition from elementary to high school instruction practices;

2. Emerging departmental structure in each higher grade to effect gradual transition from the self-contained elementary classroom to the departmentalized high school;

3. Flexible approaches to instruction;

4. Required special courses taught in departmentalized form, e.g., home economics, foreign language;

5. Guidance program to fill the special needs of this age group;

6. Faculty with both elementary and secondary certification or some teachers with each kind; and

7. Limited attention to interschool sports and social activities.

The School-Within-a-School (House Plan)

A description of Adams High School in Portland, Oregon by McIntosh and Parker provides some details about one version of the school-within-a-school instructional model.

> Adams High School will be divided into four houses, each containing 250 students, and led by a curriculum associate or house master. Each house will contain a guidance counselor, and two houses will share a guidance intern. The teachers in each house will be organized into two interdisciplinary teams. These teams will have an English teacher, a Social Studies teacher, and either a Math or Science teacher, one intern, one student teacher, and one aide. One teacher on each team will be designated leader. These two teams will design, implement, and evaluate an interdisciplinary instuctional program for their house. Additionally, consultant groups in the fields of art, music, foreign languages, home economics, business education, and industrial education will work closely with all eight teams in the developing of interdisciplinary curriculum. [8]

Each student, according to the Adams plan, will spend about half of the school day in his house. During the other part of the day, the student will be engaged in elective curriculum choices. A teacher hierarchy is planned.

Dobbins, Parker, Schwartz, and Wertheimer (3) enumerate teacher-oriented objectives behind the selection of the school-within-a-school model:

1. To make it possible for student teachers to be introduced gradually to the tasks of teaching under the tutelage of master teachers;

2. To provide more integration between the theoretical and practical aspects of the training of student teachers and interns;

3. To create a climate in which teachers can plan, analyze, and evaluate their teaching in groups as well as individually;

4. To enable teachers to think about their instructional objectives across disciplinary lines and to develop a problem-oriented approach to curriculum;

5. To explore ways in which paraprofessionals can be used to free teachers for exclusive concentration on tasks related to teaching;

6. To develop a differentiated staffing pattern that will make teaching a more viable career, both professionally and financially;

7. To involve teachers directly in the process of curriculum development; and

8. To involve teachers in the formulation of the philosophy and curricular objectives of the school.

They also enumerate student-oriented objectives:

1. To design an educational program that is relevant to the needs and interests of adolescents, especially those who are not headed for further education;

2. To widen considerably the range of courses or experiences that students can choose and to provide more opportunity for students to explore adult roles and to familiarize themselves with the world of work;

3. To create a democratic sense of community within the school;

4. To involve students in planning their own education;

5. To involve students in the life of the community by devising new ways of using the physical and cultural resources of the city for instructional purposes;

6. To achieve interpersonal sensitivity, common purpose, and smooth working relationships within the teaching team; and

7. To improve upon the administration of a comprehensive high school by hiring as managers people trained in supervision and the analysis of teaching and by making their skills central to the work of the school.

The Parkway Program

The Parkway program is unusual because it has departed, probably the furthest among all the models discussed here, from a traditional organization called "school." Resnik describes Parkway as "a school without grades, marks, arbitrary rules, authority figures, a building --or, [as] its advocates claim, boredom" (8). For the Parkway program, Philadelphia is the classroom and the life of the city is the curriculum.

Three basic organizational units called communities make up the limited structure of the Parkway program. These are Alpha, Beta, and Gamma, each comprised of approximately 150 students who are subdivided into 15 tutorial groups. One university intern and a full-time faculty member are responsible for each tutorial group. They provide whatever counseling is necessary and offer personal encouragement and support to the students under their tutelage. It is in this tutorial unit that students acquire basic skills in language and mathematics. In addition to this unit there is a management group which provides the services required for the day-to-day operations of the program. Students may choose to participate in this management group and thus be involved in determining the nature of their program. A "town meeting" is held once each week in which the whole community discusses and resolves problems relevant to the operation of the program.

In the academic curriculum, there are institutional offerings, basic skills offerings, and elective offerings.

At times teachers appear to be social workers: they contact parents, telephone and visit, work with each child in the context of the neighborhood and home environment in which he lives. The teacher in his tutorial role is the glue which holds the Parkway program together.

The evaluation of student performance takes place in the tutorial group, as part of the regular function of that organizational unit. Students are also involved in an evaluation effort during the year-end critique of teachers and courses.

The Leicestershire Model (British Infant School or Integrated-Day Model)

In the words of Sealey,

> An integrated day is one in which there are no classes as such. Instead each child makes a unique synthesis of his learning experiences. The classroom is subdivided into specially-equipped working areas. Normally, one area is associated with science and mathematics, another with reading and language arts, a third with work in the visual arts, and a fourth serves as a general purpose area. In addition, certain classrooms have a space devoted to programmed learning or other special purposes. Occasionally, teachers may work in pairs . . . [allowing] some specialist attention . . . relating to their own interest or particular abilities. [9]

Anthony Kallet captures much of the philosophy underlying the integrated-day concept.

> Most standard classrooms are virtually barren of raw materials, of things, and are overloaded with prepared materials, heavily scored with predetermined routes which allow only bogus exploration. The raw materials component of the environment is extremely important. The human components must make possible use of the materials in accordance with the child's intent and perception of the inherent properties in materials. By raw materials I mean all kinds of things, from pencils and paper to books and string and magnets and bottles and boxes, and paint and clay and mirrors and animals and . . . [10]

APPENDIX

MODEL EMPHASES FOR INSTRUCTIONAL MODELS

NEW INSTRUCTIONAL MODELS	MODEL EMPHASIS								
	Instructional use of space	Instructional use of time	School personnel utilization	Curriculum revision	Teaching methodology used	Instructional decision-making patterns	Evaluation structures	Community resources	Socio-psychological factors
Leicestershire schools	S	S	S	P	P	P	S	S	P
Nongraded school Appropriate placement school Continuous progress plan	S	S	P	P	S	S	0	S	S
School-within-a-school House plan	S	S	P	P	S	P	S	S	S
Flexibly staffed school Differentiated staffing	S	P	P	S	S	P	P	P	P
Multiunit school Individually guided education	S	S	P	S	P	P	P	P	S
Three-tiered school	S	S	S	P	P	P	S	P	P
Philadelphia Parkway program School without walls	P	P	P	S	S	P	S	P	S
Middle school	S	S	S	P	S	S	S	S	P

P = Primary emphasis
S = Secondary emphasis
0 = No real emphasis

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An abstract of "Current Research and Development Efforts in In-service Training and Curriculum Planning for Teacher Education," by Paul Mohr

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SUMMARY

Herein are discussed the need for and purpose of in-service training, including some in-service goals and weaknesses in the teaching profession; current research and efforts being made in in-service training, including teacher training models, in-service programs for teachers of disadvantaged and economically deprived children, the relationship of innovations to technology, the changing roles of teachers, and performance-based teacher certification; and the role of evaluation.

ERIC DESCRIPTORS

*Curriculum Development
*Educational Development
*Educational Research
*Inservice Teacher Education
*Teacher Education
Evaluation
Performance Based Teacher Education
Teacher Certification
Teacher Role

THE TASK

What current research and development efforts are being made in teacher education?

INTRODUCTION

Programs for in-service education need to a) stimulate and provide means for self-evaluation of teacher effectiveness, b) change patterns and methods of learning experience, c) focus on pupil learning, d) utilize inquiry teaching techniques, e) make use of educational resources, and f) improve teacher-child relationships.

NEED AND PURPOSE OF IN-SERVICE TRAINING

Weaknesses in the Teaching Profession

Evidence shows that some teachers are teaching with the same proficiency they had as student teachers. Insufficient teacher preparation and teachers who lack full certification are other weaknesses to be considered.

In-service Goals

In-service programs should encompass these goals:

1. Increase the effectiveness of all teachers, trainers, and trainees;
2. Develop the interpersonal growth of teachers;
3. Provide means for self-evaluation;
4. Change patterns and methods of directing learning experiences;
5. Improve utilization of educational resources;
6. Improve teacher-child relationships;
7. Provide opportunities for discussing and sharing of ideas;
8. Provide adequate feedback about the effectiveness of teaching;
9. Provide opportunities for continuous growth and the extension of competencies;
10. Assist practicing teachers to become more proficient in the use of media;
11. Obtain maximum impact by reaching the entire staff of a school; and
12. Involve teachers in the planning and implementation of in-service growth.

In addition to academic study, in-service education can be accomplished through workshops, staff meetings, visits and demonstrations, field trips, cultural experiences, organized group study, and individualized professional study.

CURRENT RESEARCH AND EFFORTS BEING MADE IN IN-SERVICE TRAINING

Teacher Training Models

In an effort to broaden the student teacher's experience, several elementary teacher training models have been established. They seek to improve the extensive cooperation among the universities, local schools, private industry, and state departments of education.

The University of Toledo Model Program. The basic training of teachers will be through a multiactivity program which will combine work and study, practicum and experience, and content and training. Instead of a 4-year college course, the length of time any candidate remains in a training program will depend on his capacity and ability to meet program demands.

Florida State University Model Program. The university has outlined a three-phase program to develop teacher training behaviors:

1. An underclass phase that concentrates on general education;

2. The preservice phase that begins usually with the junior year and places emphasis on professional preparation; and

3. The in-service phase that begins with the awarding of a bachelor's degree and extends for 2 school years and 3 summers.

The culmination is the awarding of a master's degree and full professional certification. During the academic year trainees will be employed as teachers but will spend their summers on campus.

Massachusetts Model Elementary Teacher Education Program. This model program attempts to institutionalize change through analyzing educational roles, tasks, structures, and objectives. A closely knit relationship between preservice and in-service training is developed.

The Michigan State Model. In this program clinical experiences are designed to develop and expand teaching facility. Five phases are planned: tutoring, career-decision seminars, analytical study of teaching, team teaching, and internship.

Northwest Regional Educational Laboratory: A Competency Based, Personalized, and Field-Centered Model of an Elementary Teacher Education Program. In the Com-Field model demonstration of competence in the performance of teaching is the basis for certification. The model also requires a partnership with the schools in designing and implementing the program.

The University of Pittsburgh Model of Teacher Training for the Individualization of Instruction. This model uses individualized instruction as a central theme. For the first 2 years of training, academic education is the dominant theme; the final 2 years focus on professional education, competencies, and self-development through guidance. During this time the trainee assumes the roles of assistant, teacher, student teacher, and intern.

The Syracuse University Model for the Preservice and In-service Education of Elementary School Teachers. This model's basis is a 5-year program. In the fifth year the student pursues a specialization program during the summers preceding and following the school year. He engages in half-time teaching at a resident center and a full-year "partnership." In a partnership, two resident students share classroom responsibilities, and each receives one half of the salary of a beginning teacher.

Columbia University Model Program. This program can be divided into four phases. In phase one, school life is studied and analyzed by candidates. In phase two, the student practices and experiments with methods and strategies in small group situations. In phase three, students study experimental teams at work in a school. In the final phase, they practice techniques they have learned and continue teaching experiments during the summer or after regular school hours.

The University of Georgia Model Program. More on-the-job experience is provided in this model than was used in the traditional training of teachers. The student has two 6-week periods of paraprofessional work with children, three 6-week periods of semiprofessional work, and a 10-week period of internship.

Incorporated into this program is a work-study program which enables a student to achieve full-time employment status and pay as a teacher aide during one quarter of the sophomore and junior years.

In-service Programs for Teachers of Disadvantaged and Economically Deprived Children

Fordham University. Fordham has a three-phase program based on the theory that teacher training does not end with certification. In phase one, students serve as school aides and assistants in social work agencies. During the second phase students are assigned as paid assistants in inner-city schools. In phase three, the students, as certified beginning teachers, work with the university instructors throughout the year.

Syracuse University. The school of education at Syracuse combines a year of graduate study, which leads to a master's degree, with a paid internship experience in laboratory schools in Syracuse's inner-city program.

Cooperative Urban Teacher Education Program (CUTE). This cooperative program involved higher education institutions and the public school systems of Kansas City, Kansas and Kansas City, Missouri.

This cooperative program was open to college seniors. It offered 16 weeks of field experience and courses in education, urban sociology, and mental health. Direct contact with low-income children enabled these prospective teachers to know why their efforts met with failure or success. There was constant feedback and contact.

Critics of the program said that it did not allow for practical application of the skills derived from the intensive short-term courses.

STEP--TTT. To make education more relevant and meaningful to the prospective teacher, the student in this program was expected to experience certain community happenings, e.g., the hospital emergency room at a peak time. In this effort, college instructors, district personnel, classroom teachers, community representatives, and teacher candidates were all in training together.

Teacher Corps. Teacher Corps recruits its candidates from college graduates who have little or no formal teaching preparation. A 2-year training program places heavy emphasis on working with the disadvantaged. Paid apprenticeship is an integral part of the corps program.

Education Professions Development Act. All of the programs under this act are geared to eliminating racial, financial, physical, and mental handicaps as deterrents to equal educational opportunities. Among the current programs are the School Personnel Utilization program, the Urban/Rural School Development program, the Career Opportunities program, the Training of Teacher Trainers program, the Training Complex programs, and the Teacher Development for Desegregating Schools program.

Other programs. Other programs include the Teacher Training and Reading Institutes in Poverty Area School Districts (under the Elementary and Secondary Education Act); ESEA's Madison Project in Arlington Heights, Ill.; the ESEA Diagnostic Learning Center in Cook County, Ill.; the Florida Migratory Child Compensatory program; the Institute for Elementary Teachers of Spanish-Speaking Children at the University of Texas; the intensive teacher training program of the National Institute for Advanced Study in Teaching Disadvantaged Youth; the 6-day in-service program of New Mexico State University with teachers of the Carrizozo Public Schools; the Mexican-American Education Research program's TV series; and the Harvard-Boston Summer Program in Urban Education.

Also, the National Defense Education Funds' programs; the summer Institute for Elementary and Secondary School Teachers of Disadvantaged Youth held at the University of Puerto Rico; the summer Institute for Preschool and Kindergarten Teachers and Supervisors of Disadvantaged Children held at the New York Medical College Institute for Development Studies; the Language Laboratory Program in English and Reading at Pennsylvania State University; North Montana College's EPDA project for preparing American Indians to teach; the Program of Professional Development conducted by the Los Angeles Unified School District; and the Institute in Negro History and Culture at the University of Southwestern Louisiana.

Also, the Sensitivity Training and Faculty Desegregation Institute at Bishop College in Dallas, Tex.; the in-service training program of the Evanston, Ill. School District; the Institute on Inter-ethnic Aspects of Public School Education of Wesleyan College, W. Va.; the Compton (Calif.) project; and the institutes at Glassboro State College, Jackson State College, the University of Omaha, Brooklyn College, Bell State University, Dominican College, Goucher College, District of Columbia Teachers College, and the Stanford Center for Research and Development.

Concluding remarks on training teachers to work with disadvantaged children. What have the federally funded programs under the National Defense Education Act done for the disadvantaged child? They have made an attempt to break away from formal courses and thereby have provided functional preparation for experienced teachers. In proportion, studies have shown that there were twice as many comments made by teachers on understandings acquired as on techniques learned. Therefore, future institutes should place more emphasis on teaching strategies, methods, and materials.

Included in the criteria for selecting participants in any program should be their potential effectiveness as change agents in their own schools.

Institute training should include three phases: preinstitute, institute, and postinstitute. Importance should be given to an application of learning to the school program. Evaluation should be made an integral part of every institute.

Programs should be set up so that instructional content is integrated with an understanding of the disadvantaged child. Assistance in translating such understanding into teaching behavior is essential. A thorough knowledge and application of the diagnostic principles and skills will enable the teacher to evaluate each child's potential. Use of this information will enable the teacher to design appropriate experiences to influence the child's learning.

Programs for Teachers of All Children

Not all in-service programs were geared to help teachers of disadvantaged children. Some, while not excluding the former, were designed for teachers of all children.

Among the programs worthy of mention in this category are the Nuffield Mathematics Centers; the Inservice Training for Improvement of Curriculum, Organizing and Instruction in the Carteret County, N.C. Public Schools; the IMPACT project in the Polk County Public Schools of Des Moines, Iowa; the related Mitchillville program in the Southeast Polk School District; the Florida High Priority Education project;

the Saturation English-Reading Inservice project, the projects in Remedial Reading and the Reading Skills Instruction program in Los Angeles; the Cortland College program; the Institute at Western Washington State; the Content Area Reading program at Dundalk Junior High School; the Sex and Family Living Education program in Bedford, Mass.; and the Strategies for Social Studies in Arlington Heights, Ill.

National Science Foundation

In an effort to meet the needs of all staff members involved in the teaching of science, numerous programs have been funded by the National Science Foundation. Some of these programs are the Flint Hills elementary project; the NSF CCSS Institute in Earth and Physical Science; the program of the University of Colorado State Department of Education to aid school districts in the initiation and development of curriculum change in elementary school science; the Innovative Science Training program held at the Elk Grove Training and Development Center in Illinois; and the workshops and institutes at Kansas State Teachers College and San Jose State College.

In the 1969 financial year the National Science Foundation awarded grants totaling $5,496,241 to improve the teaching of science and mathematics. The following are among the institutions that received grants for institutes in the summer of 1969 and follow-up sessions during the 1969-1970 school year:

Elementary level. Florence State University; Spring Hill College, Ala.; Arizona State University; Southern State College, Ark.; California State College; University of California, Berkeley; Dartmouth College, N.H.; Newark State College, N.J.; Stevens Institute of Technology, N.J.; Hofstra University, N.Y.; St. John's University, N.Y.; State University of New York; Syracuse University; East Central State College; Southwestern State College; Eastern Oregon College; Portland State College; Kansas State Teachers' College; Nicholis State College; and Northwestern State College.

Also, University of Maryland; University of Massachusetts; Central Michigan; Michigan State University; Mississippi State College; Webster College; University of California, Los Angeles; University of Illinois; University of Colorado; American University; George Washington University; University of Georgia; Northwestern University; University of Wisconsin; Mt. Mercy College; Morris College; South Dakota State University; University of South Dakota; East Tennessee State University; North Texas State University; University of Houston; University of Utah; and College of William and Mary.

Secondary level. University of Arkansas; Troy State University, Ala.; California State College; Chico State College; College of Notre Dame; Fresno State College; San Diego State College; Stanford University; University of California; University of Santa Clara; University of Southern California; United States International University; Colorado State College; University of Colorado; Western Connecticut State College; District of Columbia Teachers College; Howard University;

Florida Institute of Technology; University of Florida; University of South Florida; Emory University; Oglethorpe College; University of Georgia; University of Illinois; Northwest Nazarene College; University of Idaho; Greenville College in Illinois; Illinois Institute of Technology; and Roosevelt University.

Also, Depauw University; Indiana State University; Asbury College; Louisiana State University; Northwestern State College; University of Southwestern Louisiana; Goucher College; Eastern Nazarene College; Bridgewater State College; University of Massachusetts; Eastern Michigan University; Michigan State University; University of Michigan; St. Cloud University; Mississippi State College; University of South Mississippi; Central Missouri State College ; Southeast Missouri State College; University of Missouri, Creighton University; Drew University; Eastern New Mexico University; New Mexico State University; Brooklyn College of the City University of New York; and York College of the City University of New York.

Also, College Center of the Finger Lakes; State University of New York; State University College; Waldemar Medical Research Foundation; Duke University; East Carolina University; Ohio State University; Ohio University; University of Akron; Oklahoma State University; Temple University; University of Rhode Island; Austin Peay State University; Christian Brothers College; Memphis State University; Vanderbilt University; East Texas State University; North Texas State University; University of Houston; University of Texas at Austin; University of Texas at El Paso; West Texas State University; Brigham Young University; University of Utah; West Liberty State College; West Virginia University; University of Wisconsin; and University of Wyoming.

Many good things were accomplished by the workshops and institutes sponsored by the National Science Foundation. Many experienced teachers were given new insights into the inquiry method of teaching. In many instances the local workshop was a first attempt at training teachers through their own peers and within their own environment. When group activity sessions involved maximum use of manipulative materials and interaction among participants, much was gained. Participants reacted most positively to general sessions that included material of practical value. Again it was noted that summer sessions were more effective than academic workshops.

It seems from later reports and evaluation that lasting effects, in some instances, were short lived. Many times financial difficulties interrupted the progress. In-service programs were plagued with interfering and conflicting activities. Many workshops suffered from lack of administrative cooperation. And, too, the human element of monetary gain was ever present. A 1969 report from the Montgomery County Public Schools in Maryland found it difficult to notice any lasting effect of the workshops. It would appear that the key to success in any program is the cooperative support of both administrators and teachers.

Innovations and Technology

It is not possible to separate entirely innovative practices and technology, for one is dependent upon the other for desired effectiveness. Programs relating each to the other have been held in the Alexandria, Va. schools; Tallahassee, Fla.; Scarsdale, N.Y.; the University of Rochester; the University of West Florida; Appalachian State University; Florida State University; and Wayne State University.

Regional laboratories. In addition, regional laboratories were created by the 1966 Elementary and Secondary Education Act. They were not to be laboratories in the traditional sense of a building or a series of buildings but were to be a grouping of minds to enhance and expand the positive effects of the teaching profession. Twenty of these groups were located around the country.

In the initial stage of these laboratories, uncertainty about their purpose and identity generated confusion. Serious funding and staffing problems plagued them. In 1968 an evaluation was conducted, and as a result five laboratories were given 6 months to terminate their existence.

In 1969 21 million dollars were given to fund the remaining 15 regional laboratories, which at this time had a better idea of what they were supposed to be doing. More communication existed among the laboratories, and each laboratory concentrated on the application and testing of materials in the classroom. Since each lab worked on only a few development projects, the projects received more in-depth treatment. In October 1969, four labs in St. Ann, Mo.; Austin, Tex.; and Los Angeles and Berkeley, Calif. received assurances from the U.S. Office of Education that they would be supported for 5 years, through 1974. But there were two strings attached: the labs' continued high level of performance and the availability of funds from one year to the next.

The labs have been located in Minneapolis; Portland, Oreg.; Durham, N.C.; Atlanta, Ga.; Albuquerque, N.Mex.; Austin, Tex.; Inglewood, Calif.; Newton, Mass.; New York City; Charleston, W.Va.; Berkeley, Calif.; Syracuse, N.Y.; and Detroit.

Technology. There is a divided field regarding the use of technology in the classroom: there are as many advocates for its use as against it. It is the responsibility of teacher educators to know the uses and limits of technology and use it to achieve educational goals. Effective in-service programs will be those that give the teacher the tools, skills, and techniques which he feels are the right ones. Successful programs will motivate the teacher to spend extra time and effort to upgrade or change his instructional practices.

Among the technological innovations worthy of mention are programmed learning, dial access systems, tape cassettes, satellite TV, cable TV, video tape, and computers.

Changing Roles of Teachers

Rapid changes in media, materials, curricula, and the role of the teacher make in-service education one of the most crucial problems facing educators today. New roles for teachers need to be established to make effective use of the advances in educational technology and new insights into learning.

Teacher education centers. The concept of the teacher education center gives a unifying approach to the study of teaching and supervision. The speed with which centers are able to respond to member requests enables them to do a better job than most colleges and universities in keeping teachers and administrators abreast of current trends.

Teacher education centers, while strengthening in-service programs, are the means and places where individuals or teams can study formal and informal teaching and learning techniques and can thereby become better and more effective teachers, as well as better and more effective teachers of teachers.

Differentiated staffing. Differentiated staffing is a relatively new innovation which seeks to make better use of educational personnel. Shortage of trained personnel can be alleviated by distributing a teacher's work among activities that require varying degrees of understanding and skill. There is a need to establish structures in schools that will allow levels and kinds of professional talent to be recognized.

Team teaching. In-service teacher education can be more effective if planned by multigrade planning/teaching teams. This team concept is based on the assumptions that the teacher knows his students and that he also has some degree of specialization in subject areas. Each multigrade team is responsible for guiding three class-sized groups of students in consecutive grades for a 3-year sequence. At regular meetings of team members, each member is expected to provide leadership in a specific subject. Thus, there is a sharing of information on current research and practice. Automatic, continuing in-service education occurs through this information exchange.

Teachers as change agents. It is important for teachers fresh from innovative programs to be instrumental agents in implementing innovative practices in their schools. To make his desire for change known, the teacher must speak out but at the same time must be willing to accept responsibility for his actions.

Performance-based Teacher Certification

Mere accumulation of credits and time spent in the teaching field can no longer be the sole requisites for certification. Performance-based certification requires evidence of a candidate's ability to perform as a teacher.

By adapting a performance-based approach to teacher certification, the credibility of certification would be enhanced and the teaching profession strengthened.

EVALUATION

It might be said that our greatest failure as a profession lies in unexamined alternatives and unasked questions. Newer models of teacher education call for a partnership between college or university and the school system. More dialogue between classroom teachers and teacher educators is also essential. There is a need to convince teachers that continuous training, which they have helped to plan and implement, must be a part of their career. Moreover, individualized education may be just as important for teachers as it is for children.

In all of the in-service programs it was noted that without administrative support, implementation of any program was almost impossible. Teachers were more appreciative of programs given in the summer or on a released-time basis. After-school programs, in most instances, produced little positive growth, because the teachers were too tired to participate actively in them.

In-service programs involving active participation of teachers, laboratory and field experiences, and work with children seem to be most favored by teachers.

An abstract of "Methodologies for Ascertaining Local Educational Needs and for Allocating and Developing Resources," by Fred Bellot

SUMMARY

Herein are discussed general approaches to needs assessment, including its relationship to the identification of long-term goals, its relationship to state, regional, and federally supported programs, its relationship to the justification of decisions, and its relationship to responses to current problems; recommendations for responses to needs assessments; and case analyses, including programs in Carmichael, Calif.; Milwaukee, Wis.; Westport, Conn.; Portland, Oreg.; Detroit, Mich.; Las Vegas, Nev.; Palm Beach, Fla.; LaGrange, Ill.; Castle Rock, Colo.; the Montgomery County Public Schools, Md.; the Warwick and Barrington schools, R.I.; Skokie, Ill.; Buffalo, N.Y.; Jackson, Mich.; Pinellas County, Fla.; Oshkosh, Wis.; Scottsdale, Ariz.; Memphis, Tenn.; Seattle, Wash.; and Champaign, Ill.

ERIC DESCRIPTORS

*Educational Programs
*Educational Needs
*Educational Resources
*Methodology
*Resource Allocations

THE TASK

In the past what methodologies have been employed in ascertaining local educational needs? What methodologies have been used in responding to these needs in terms of resource allocation and development?

PROBLEM STATEMENT

One overriding priority has been established for this study: the examination of materials produced by school districts.

PROCEDURES

A simple survey instrument was sent to the director of research/evaluation/assessment in 125 school districts in the U.S. Of the 44 who replied, 20 indicated recent assessments.

The common element in the school assessment was the limitation placed on data gathering. Data were obtained from examining school records or questioning school staffs.

A SUMMARY OF GENERAL APPROACHES TO ASSESSING NEEDS

As might be expected, this study reveals that relatively few local school districts use systematic and comprehensive approaches to ascertaining educational needs. Nevertheless, approaches are quite varied and are associated with attempts to a) identify long-term directions and goals; b) provide bases for state, regional, and federally supported programs and projects; c) justify decisions that have been made or completed; and d) provide additional insight into the nature of current problems.

Needs Assessments Related to the Identification of Long-term Goals

The most significant characteristics of procedures used in needs assessments related to the establishment of long-term goals and objectives is the scope and depth of involvement of all members of the school community.

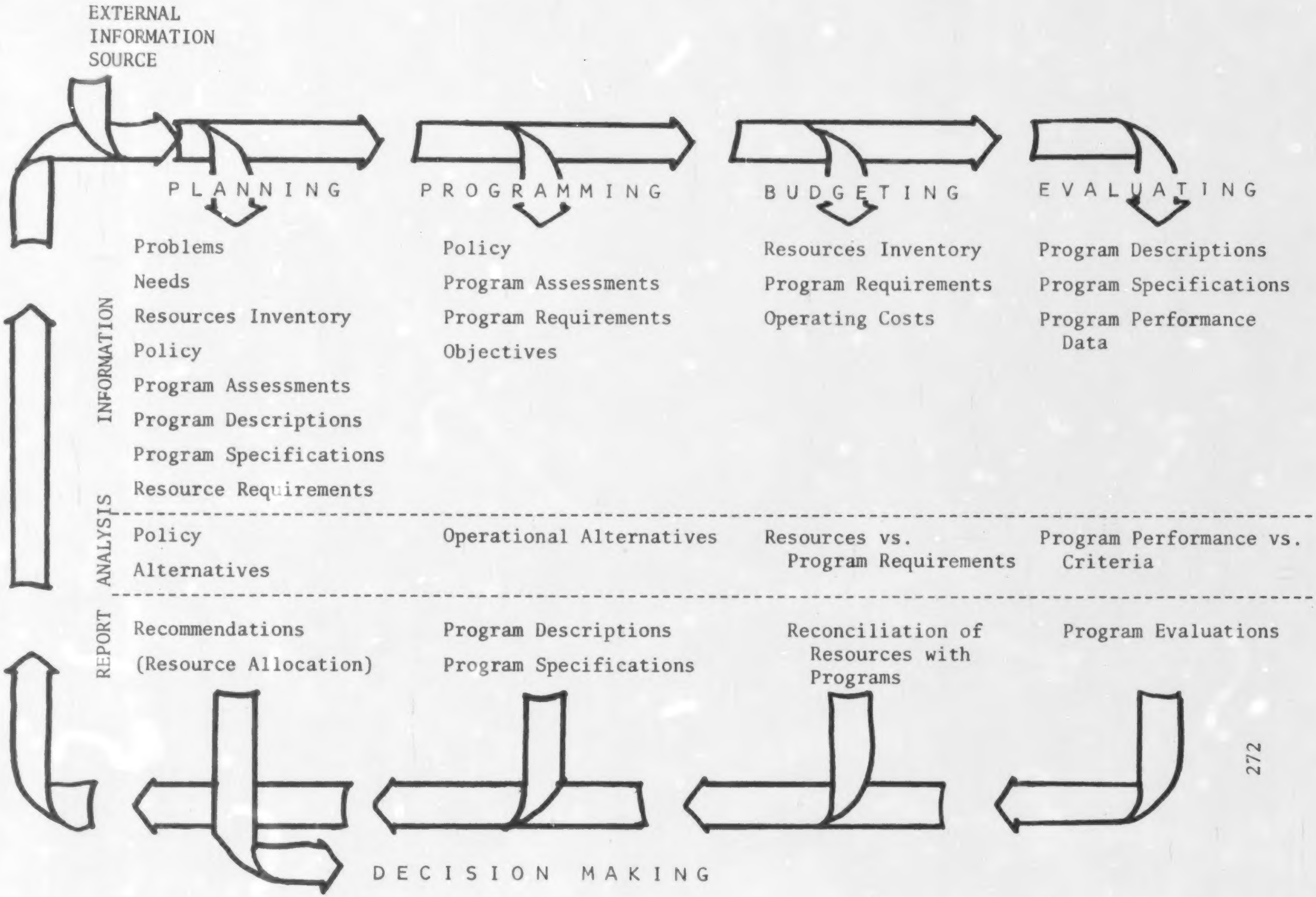
The questionnaire, with all of its inherent disadvantages, remains the primary tool for obtaining data. In addition, practically all of the goals-oriented needs studies use discussion techniques in conjunction with a questionnaire.

It would appear that schools are much more successful in obtaining data from people in the schools (i.e., staff and students) than from people in the community at large.

Needs Assessments Related to State, Regional, and Federally Supported Programs

This study indicates that assessments conducted in relation to

FIGURE 1. EDUCATIONAL RESOURCES MANAGEMENT SYSTEM
Illustration of Interaction of Responsibilities Among the Processes



	PLANNING	PROGRAMMING	BUDGETING	EVALUATING
INFORMATION	Problems Needs Resources Inventory Policy Program Assessments Program Descriptions Program Specifications Resource Requirements	Policy Program Assessments Program Requirements Objectives	Resources Inventory Program Requirements Operating Costs	Program Descriptions Program Specifications Program Performance Data
ANALYSIS	Policy Alternatives	Operational Alternatives	Resources vs. Program Requirements	Program Performance vs. Criteria
REPORT	Recommendations (Resource Allocation)	Program Descriptions Program Specifications	Reconciliation of Resources with Programs	Program Evaluations

projects funded by outside sources are always limited to a predetermined area of need. Moreover, instruments and techniques used to obtain data are always limited to the questionnaire and personal interview.

Needs Assessments Related to the Justification of Decisions

The most interesting aspect of assessments grouped under this heading is their relationship to the implementation of a management system for educational resources.

Participation in this kind of needs assessment is more limited than the participation associated with establishing long-term goals, and the committee structure is more limited. Instruments and techniques for gathering data are those common to all assessments.

Needs Assessments Related to Responses to Current Problems

The most common purpose of assessments under this heading is determining building needs. What methodologies have been used in responding to these needs in terms of resource allocation and development? Two general approaches are subtly evident among the cases analyzed. One is an application of one or more of the elements of planning-programming-budgeting systems; the other is a staff retraining response.

RECOMMENDATIONS

Once specific goals and general objectives for education have been identified and accepted as public policy, it is folly to consider any system for education which contemplates the random application of teaching methods or the pursuit of random objectives. The most propitious program is one that has the most effect for the least expenditure of resources within the limits of social acceptability.

Evaluation provides the feedback to program operations, facilitating the correction of undesirable deviations from anticipated results.

The interrelationship among processes in the Educational Resources Management System is illustrated in Figure 1.

CASE ANALYSES

The case analyses that follow indicate the types of needs assessment activity within school districts.

Akron, Ohio

The Akron Board of Education undertook the assessment of educational needs through an information/response instrument which was designed to provide information as well as to elicit a response on the part of the reader. All citizens of the community were invited to respond.

The instrument consisted of a 36-page brochure, attractively printed and entitled "Blueprint for the 70's." A total of 8,915 booklets was distributed; a lesser number was completed and returned for analysis.

The committee concluded that the "Blueprint for the 70's," far from providing a blueprint for the future, reconfirmed a conservative outlook for the Akron public schools.

San Juan Unified School District, Carmichael, California

This district undertook a comprehensive assessment of itself. The major strength of the project was probably the depth to which the community was involved in the design, implementation, and operation of the project.

The model called for the development of a survey instrument in the form of a questionnaire. The results of the questionnaire were tabulated and were discussed in open meetings. The next step was personal interviews.

The model was applied to five community groups. Included were a community-school contact team, a community contact team, a student team, a certificated staff goals committee, and a classified personnel team.

The final report included a statement of philosophy and concise statements about general goals for the school district. Each goal statement is documented by the evidence gathered in the survey. The specific survey item from each of the five instruments is in each case cited as the source of evidence.

Eight months later a follow-up report was presented to the board.

Fox Point-Bayside School District, Milwaukee, Wisconsin

The Fox Point-Bayside School District utilized a special issue of the *School Board Notes* for involving the community in a review of educational objectives. The issue presented the school's credo and learning objectives. Each recipient was asked to respond by answering a series of open-ended questions.

A year later, an analysis of the response was reported to the people through another special issue. The responses had been examined by a review committee consisting of school board members, PTA members, teachers, a curriculum coordinator, a principal, and a superintendant.

The review committee used the analysis to prepare statements of student performance objectives in 13 general academic, complementary, and supplementary areas of the school program. The report was followed up with open discussion meetings scheduled in the community.

Westport, Connecticut

The determination of school goals was accomplished through a citizens advisory committee appointed by the school board. The committee deliberated for 2 years in preparing its report of findings. Concurrent with the "goals" committee were the committees for character education and the long-range school budget.

The report of the goals committee was subjected to a one-year review by the community and school district staff before specific action was initiated to implement the report recommendations. The 16 goals ultimately adopted by the board were the result of many compromises between liberal and conservative factions within the community.

The goals were organized into a framework that facilitated an analysis of priorities touching several definable elements, such as pupils' academic, interpersonal, and personal goals and programmatic goals in the fields of instruction, organization, and logistics.

The general framework for the methods applied in Westport falls within the purview of a planning-programming-budgeting system, especially as the system is defined (by the Association of School Business Officials) as an example of the Educational Resources Management System. The system eventually requires a cost-analysis subsystem sufficient to enhance the program analyses essential to the allocation of resources.

Detroit, Michigan

The assessment of needs for the elementary school program of the Detroit Public Schools was called an evaluation. It came at a time of decentralization efforts for the elementary schools of the city. The information gathered was to be used by the boards of the new regional districts.

Two specific purposes were set forth for the study. One purpose was to provide information which would be useful in making decisions significant to the operation and improvement of the elementary school programs. The second purpose was to assure that changes would occur in the support structure for the schools as well as in the individual schools.

The evaluation was conducted by the staff with the assistance of a team of nationally recognized authorities and consultants in the field of elementary education. Part of the task assignment was to isolate a limited number of high priority problems. As each problem area was selected for attention, alternatives for solutions to the specific problem were formulated.

A major undertaking of the project was the distribution and analysis of an opinion questionnaire. The distribution was made to 4,851 parents, members of the community, students, teachers, and school staff personnel. The form was an open-ended questionnaire literally asking a response for the greatest strengths and weaknesses of the Detroit elementary schools. The results were classified and rank-ordered for ease in analysis.

Clark County School District, Las Vegas, Nevada

This district developed assessment guidelines as the product of an Elementary and Secondary Education Act Title V grant. The basic project intentions were to reevaluate the district's administrative structure and to develop job descriptions that specified functions.

The means used for the assessment involved a system for stating behavioral objectives, including qualitative ones, for performance.

Palm Beach County, Florida Board of Public Instruction

This district conducted a needs survey as a part of the application for the ESEA Title I project funds. The application of the assessment was limited to a survey of staff opinions or expressions of need. The items on the survey were listings of possible needs for the schools of the community.

LaGrange, Illinois

School District 204 in LaGrange is preparing for a visit of the North Central Association accreditation team. Thus the district has recently revised its statement of philosophy and has also engaged in a number of activities designed to evaluate its instructional program.

Procedures employed in the evaluation of the district's program included the development of questionnaires by a school-community committee and the selection of a random sampling of students and community residents to respond to a questionnaire.

Portland, Oregon

The needs assessment for Portland was in conjunction with Project TREND there. It was aimed at identifying the educational needs of disadvantaged children in the Portland school district.

Three general kinds of information were used to complete the survey. The first kind was information contributed by experts identified by their training or position in the community. The second kind was derived from written questionnaires filled in by teachers and students. The third kind came from the records maintained by the school district.

Douglas County School District RE 1, Castle Rock, Colorado

The assessment of needs in this school district was accomplished through a 2-year contract with the University of Denver Bureau of Educational Research. The goal of the Douglas County study was the production of a long-range educational plan which would be appropriate for the initial implementation phases of a planning-programming-budgeting system. The chief data sources used in the study were the central administrative office files and the records available at the offices of the principals in the district.

Montgomery County Public Schools, Maryland

These schools established a long-range planning committee in 1967. The initial activities of the committee included a statistical analysis of trends or the status of the following: population, distribution, transportation facilities, land use, occupations and employment, economic resources, communications facilities, automation and computer capacity, morality and religion, political organizations, and medical science. It was assumed that analysis could facilitate a description of the community that students would face by 1980. Associated with the trend and status analysis was a consideration of the changes the school system would necessarily undergo to accomodate the change in society.

The recommended methodology included a decentralization of governance of the school district and the creation of an organization based upon six subdistricts within the county school district.

An outgrowth of the deliberations of the long-range planning committee was interest in the potential of the planning-programming-budgeting systems (PPBS) being introduced into the educational arena of that day. The PPBS system was seen as an aid to better decisions concerning the allocation of resources. As a consequence, several seminars were planned and conducted to introduce members of the board and selected administrative personnel to the developing concepts of PPBS. Orientation excursions were made to school districts employing the technique. Then an operational task committee was appointed to develop a specific PPB system for Montgomery County.

Warwick School Department and Barrington School Department, Rhode Island

The Warwick School District introduced PPBS as a means for improving the allocation of resources to educational programs.

The planning-programming-budgeting system of the two school districts is described in four phases of development and operations: components, activities, evaluation, and conclusions.

Cook County School District No. 68, Skokie, Illinois

This district established a goals committee in 1969. The committee did not attempt a direct assessment of educational needs. Instead it assumed that when committee members who represented a cross-section of leaders in the school community considered appropriate goals for their schools, the specific educational needs of their clients would be reflected in these goals.

The committee's work culminated in the approval by the board of education of a statement "The Goals of School District #68." The statement is the foundation upon which the district's professional staff is developing specific educational objectives.

External Sensory Mechanisms, Buffalo, New York

External sensory mechanisms are instruments developed to obtain local and national opinion, demographic data, and financial data for school districts. They were developed by the Educational Administration Phase I Class at the State University of New York, Buffalo, in cooperation with the Maryvale, New York PPBS project.

Four basic areas of information are assessed by the instruments: local perceptions of education, national trends in education, demographic data, and revenue data and financial information.

The mechanisms followed in the Maryvale School District are not intended as a discovery of sources, materials, and methods but as a process of ordering methodologies and information currently available to the school district. As such, the Maryvale effort is important for a presentation of methodologies leading to a reordering of resource allocation priorities.

Jackson Public Schools, Jackson, Michigan

The assessment of needs process for the Jackson, Michigan public schools took the form of an application for financial support pursuant to ESEA, PL 230, Title III.

Pinellas County, Florida

The assessment project undertaken in Pinellas County, Florida culminated in a report to the citizens of the county entitled *Project Education 70's*. The study determined that a system-wide, in-depth study of education was required.

A survey questionnaire was developed and distributed to 11,000 representatives of the community. The purpose of the questionnaire was to determine community goals which would serve to guide the subcommittees in developing master plans. The stated goals were formulated from the 6,000 responses to the questionnaire.

The steering committee strategy included two workshops on innovations in education, two progress reports, and the establishment of a speaker's bureau.

Oshkosh Area Public Schools, Wisconsin

The needs assessment by the Oshkosh area public schools is typical of the building survey of almost any school district (with a few "extras"). The survey was accomplished with personnel employed by the school district. The published report was a report to the people.

Scottsdale Elementary District No. 48 and Scottsdale High School District No. 212, Arizona

The school building survey and assessment of facility needs for

Scottsdale, Arizona were under the direction of a prominent school facilities consultant utilizing prominent educators from across the nation as a survey team.

The strategy employed was a series of meetings during an 18-month period that involved school personnel and lay citizens. Additional information about the attitudes of the community was obtained through polls and questionnaires.

Memphis, Tennessee

Two survey studies for the area formed the basis for the survey report that followed. The first, a survey of educational facilities, was a comprehensive analysis and inventory of all educational facilities within the community. The second, a manpower survey of the community, was designed to reveal manpower needs with special attention to the nature of personnel qualifications.

Seattle, Washington

Seattle, Washington School District No. 1 followed a pattern for surveying the building needs typically used by school districts in many areas. The published results of the survey were produced by a commercial consulting firm.

The general methodology was a three-step process beginning with the development of basic assumptions for educational goals and policies especially germane to facility planning. The second step was the preparation of student population projections by geographic area. The final step included an inventory of facilities with recommended alternatives for meeting the district's needs.

Champaign Community Schools, Champaign, Illinois

To deal with a budget deficit, the board of education in Champaign established a program priorities committee consisting of representatives from the teaching staff, administration, the board of education, and the community. In a series of meetings, the committee studied all aspects of the schools' program.

ABOUT ERIC

The Educational Resources Information Center (ERIC) forms a nationwide information system established by the U.S. Office of Education, designed to serve and advance American education. Its basic objective is to provide ideas and information on significant current documents (e.g., research reports, articles, theoretical papers, program descriptions, published and unpublished conference papers, newsletters, and curriculum guides or studies) and to publicize the availability of such documents. Central ERIC is the term given to the function of the U.S. Office of Education, which provides policy, coordination, training funds, and general services to the clearinghouses in the information system. Each clearinghouse focuses its activities on a separate subject-matter area; acquires, evaluates, abstracts, and indexes documents; processes many significant documents into the ERIC system; and publicizes available ideas and information to the education community through its own publications, those of Central ERIC, and other educational media.

TEACHER EDUCATION AND ERIC

The ERIC Clearinghouse on Teacher Education, established June 20, 1968, is sponsored by three professional groups--the American Association of Colleges for Teacher Education (fiscal agent); the Association of Teacher Educators, a national affiliate of the National Education Association; and Instruction and Professional Development, National Education Association. It is located at One Dupont Circle, Washington, D.C. 20036.

SCOPE OF CLEARINGHOUSE ACTIVITIES

Users of this guide are encouraged to send to the ERIC Clearinghouse on Teacher Education documents related to its scope, a statement of which follows:

> *The Clearinghouse is responsible for research reports, curriculum descriptions, theoretical papers, addresses, and other materials relative to the preparation of school personnel (nursery, elementary, secondary, and supporting school personnel); the preparation and development of teacher educators; the profession of teaching; and the fields of health, physical education, and recreation. The scope includes the preparation and continuing development of all instructional personnel, their functions and roles. While the major interest of the Clearinghouse is professional preparation and practice in America, it also is interested in international aspects of the field.*

The scope also guides the Clearinghouse's Advisory and Policy Council and staff in decision making relative to the commissioning of monographs, bibliographies, and directories. The scope is a flexible guide in the idea and information needs of those concerned with pre- and in-service preparation of school personnel and the profession of teaching.